Beginning Edition

Math+Science Connection

Building excitement and success for young children

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St. Bernard of Clairvaux
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TOOLS & TIDBITS

Sports math

Boost your child's math skills while you watch sports together. Ask him how many points the trailing team would need to tie or win. Then, have him calculate the touchdowns, baskets, goals, or runs needed. Older children could work out the possible combinations (touchdowns, extra points, field goals for football; three-pointers, regular baskets for basketball).

Learning about levers

With a piece of wood, a nail, and a hammer, your youngster can learn about a *lever*—a type of *simple machine* that uses force to move or lift an object. Hammer a nail into the wood, and ask her to try to remove it with her fingers. Then, show her how to carefully use the claw end of the hammer to remove the nail. She'll see that a lever makes the job easier.

Web picks

Take a virtual field trip to the Long Island Children's Museum. At *www.licm.com/for_kids.php*, your child can discover patterns, explore symmetry, and enjoy other math and science activities.

Find science experiments and articles at *www.knowmag.ca*, the online version of *Know: The Science Magazine for Curious Kids.* Topics include animals, the solar system, technology, and more.

Worth quoting

"Mathematics is the door and key to the sciences." *Roger Bacon*

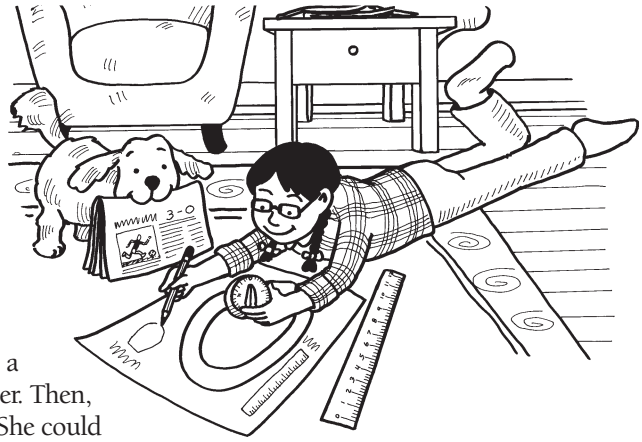
Just for fun

Q: If you add 2 apples and 3 apples, what will you get?

A: A math problem!

All about zero

Sometimes zero means nothing, and sometimes it means something. Why do we need the number zero? Use these fun activities to show your youngster why zero is important!



Hunt for zero

Send your child on a search for zeroes. She might find them on a kitchen timer, a ruler, or a score in a newspaper. Then, let her make a "zero poster." She could draw a big zero on a poster board and decorate it with the examples she found. Talk about how zero can be used—as a starting point (ruler), an ending point (timer), or a way to say "nothing" (score).

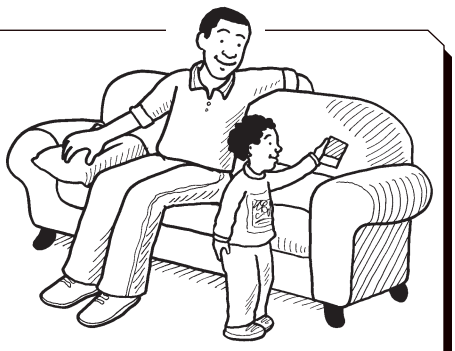
Hold that place

With pencil and paper, have your youngster write the numbers 2, 20, and 200 and read them aloud. Then, let her erase the zeroes and read the numbers again. (20 and 200 are gone!) Explain that zero is a *placeholder*—just as she might ask a friend to hold her place in line while she gets her jacket, the number zero can hold a place in numbers (*example:* 20 has 2 in the tens column and 0 in the ones column—since there are no "ones," zero is used to hold a place in that column).

No more left!

Give your child three grapes, have her eat all three, and ask her how many are left (zero). Then, help her write the subtraction problem ($3 - 3 = 0$). Practice with a few more scenarios, and have her solve the subtraction problems ($5 - 5 = 0$, $9 - 9 = 0$). She'll learn that sometimes the answer to a math problem is zero.

What color?



Teach your youngster to be a keen observer by encouraging him to notice subtle differences in colors. Try this idea.

At a hardware or home improvement store, let your child pick out a variety of paint strips. Cut the strips into individual colors, and put them in a small bag.

Then, have him pick one out and walk around your house or outside looking for objects that match the shade exactly. As he compares a dark green paint chip to your carpet, a sofa, or the grass, for example, he'll realize that there's a wide range of green—and that he has to look closely to find the differences!

An array of fun

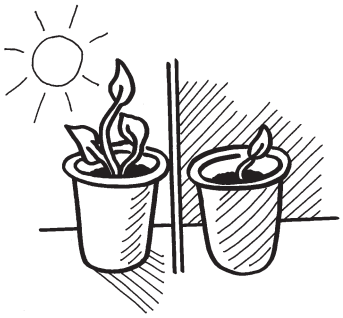
What do a carton of eggs, a muffin tin, and window panes have in common? They're all examples of *arrays*—arrangements of objects organized into rows and columns. Use arrays to help build your child's understanding of grouping:

- Have your youngster find arrays and draw pictures of them. Suggest that he look at home (panels on a door, drawers on his dresser) or in stores (cupcakes at the bakery, toilet paper rolls in a package).
- Let him make his own arrays with a muffin tin and small objects (Legos, blueberries). For example, he could form an array with 2 rows of 3 Legos each. Ask him how many ways he can count the Legos (6 groups of 1, 2 groups of 3, 3 groups of 2). Then, help him write the addition problem for each grouping (1 + 1 + 1 + 1 + 1 + 1 = 6; 3 + 3 = 6; 2 + 2 + 2 = 6). *For older children:* Turn the groupings into multiplication problems: 6 x 1 = 6, 2 x 3 = 6, 3 x 2 = 6.

SCIENCE LAB Plant growth

What do plants need to grow? With this simple experiment, your youngster will find out.

Materials: 2 plastic or paper cups, potting soil, 6 bean seeds, water



Help your child fill each cup $\frac{2}{3}$ full of potting soil and add 3 seeds to each one. Let her cover the seeds with more soil and moisten with water. She should put one cup in a sunny window and one in a darker place. Have her water the containers daily to keep the soil damp.

What happens? The plant in the sunny spot will grow faster and taller.

Why? Plants need sunlight as well as water and air to make the food that is necessary for them to grow.

OUR PURPOSE

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

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MATH CORNER I know that number!

Here are two fun ways to spend time with your child and give him practice learning to recognize numbers.

Make a Dalmatian. Write the numbers 0–5 on separate index cards. Shuffle the cards, and place them facedown in a stack. Have each player draw an outline of a large dog on a sheet of paper. Take turns picking a card, saying the number out loud, and drawing that number of spots on your dog. When you've used all the cards, shuffle them and play again. Whose Dalmatian has the most spots after three rounds?

Go fishing. Give each player his own "fish bowl" (a clear bowl or plastic container). Then, put out a pile of "fish" (buttons or other small objects) and a stack of index cards numbered 0–10 (shuffled and facedown). To play, pick a card, and put that number of fish in your fish bowl. Return the card to the bottom of the stack. The first one to get 25 fish in his bowl wins. *Note:* Players can use paper and pencil to keep track of their fish.

PARENT TO PARENT Math box

At back-to-school night, Becca's teacher had a great idea for helping children practice math at home. She suggested that we put together a portable "math box" to play with anytime.

I got a plastic tote box, and together Becca and I filled it with "things with numbers." She put in a deck of cards, dominoes, dice, and flash cards. I added a pencil, a notepad, and a small bag filled with beads.

Then, we thought of math games she could try. Becca suggested rolling three dice and arranging them from lowest to highest. I said she could add the dots on both sides of the dominoes. We wrote each idea on a separate piece of paper and stapled them into a "math idea book." Now she's using her math box in the car, in bed before she goes to sleep, and even at breakfast—and she likes playing with math!