

Math+Science Connection

Beginning Edition

Building excitement and success for young children

December 2009

John Paul II Catholic School

TOOLS & TIDBITS



Number search

This hide-and-seek game will give your child practice putting numbers in order. Write the numbers 1–10 on separate sticky notes and hide them around the house. Then, ask your youngster to bring the numbers back to you in order. Play again using number words (one, two, three) or ordinal numbers (1st, 2nd, 3rd).

Changing colors

Have your child fill a clear glass with water and add a single drop of food coloring. Without shaking or stirring, he'll see the entire cup of water turn color. Why? Because of *diffusion*. That's the process where particles mix together on their own—without anything moving them.

Web picks

📖 Your youngster will have fun adding and subtracting with Count Hoot the Owl at www.bbc.co.uk/schools/laac/numbers/chi.shtml. As she builds skills, she can make the games harder.

📖 Design a car, learn about oil spills, take a bat quiz, and more at <http://scienceview3.lhs.berkeley.edu/kidsite>. This site from Lawrence Hall of Science is filled with interesting science activities for young children.

Worth quoting

"The important thing in science is not so much to obtain new facts as to discover new ways of thinking about them." *William Lawrence Bragg*

Just for fun

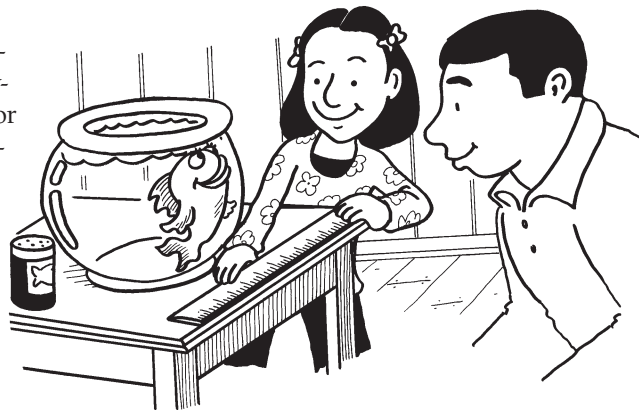
Q: Which side of a duck has the most feathers?

A: The outside!



Measure for measure

Whether she's measuring items for a math activity in elementary school or measuring a room for carpet when she's an adult, your youngster will measure things her whole life. Give her practice now with these ideas:



- Read *How Big Is a Foot?* (Rolf Myller) to help your child see why we need standard units of measurement. In the book, the king wants a new bed, but no one can figure out how many feet it should be because everyone's foot is a different size. Then, try this for yourselves: walk, heel to toe, across your youngster's room to measure its length. She might measure 16 feet, while you measure 8 feet.

- Have your youngster measure objects in your house using items like markers (or paper clips) that are each the same size. To measure the kitchen table, she might line up markers end-to-end down the table and say, "The table is 10 markers long."

- Help your child use a ruler to measure objects accurately. Point out the large lines marking inches and the smaller lines marking $\frac{1}{2}$ inches. Show her how to line up the zero at the edge of an item. Then, have her round to the nearest inch: "The book is a little more than 8 inches wide."

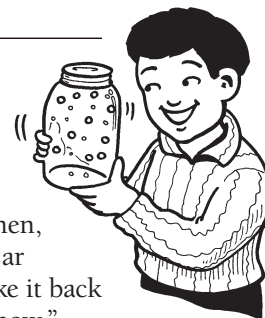
- Work on estimation and measurement skills. Give your youngster an item like a bookmark. Have her find three things that are shorter than, longer than, and the same length as the bookmark. She'll have to estimate which items might work and measure them against the bookmark to check. 🦋

Blizzard in a jar

Your child can create the magic of a snow globe with this activity that demonstrates principles of chemistry.

Fill an empty, clean jar (baby food jar, canning jar) about $\frac{1}{4}$ full with rubbing alcohol. Let your youngster drop in decorations like glitter, sequins, and buttons. Then, have him pour in vegetable oil to the top and close the jar tightly. He can turn the jar upside down and gently shake it back and forth. When he turns it right side up, he'll see it "snow."

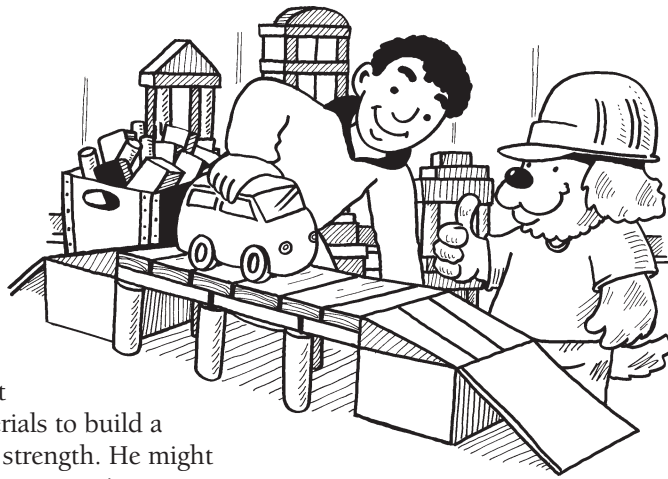
Explain that when he shakes the jar, the oil breaks up into tiny drops and the decorations move around. Because the oil is denser than the alcohol, the drops will sink to the bottom along with the decorations. 🦋



Little engineers

When your youngster builds with blocks or makes a tent, he's learning about structures. Here are activities that will stretch his thinking about materials, design, supports, and strength.

Towers. Have your child make towers of different materials, such as wood blocks, paperback books, and paper cups. Which one can he build the highest before it collapses? Can he combine materials to build a higher one? Have him test each tower for strength. He might fan it with a magazine, jump up and down next to it, or put something heavy on top. Which materials can withstand the most "wind" or weight?



paper tubes, craft sticks, and glue. Can he design a bridge strong enough to drive a toy car across?

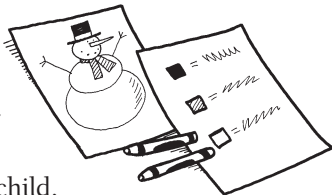
Bridges. Challenge your youngster to build a bridge. Have him set two shoe boxes about 12 inches apart on the floor. Put a piece of blue construction paper on the floor in the middle—that's the "river" he needs to build a bridge over. Give him materials like paper, cardboard,

MATH CORNER Who am I?

Making a *glyph* combines art and math and gives your children a new way to represent data.

Have each youngster draw three circles for a snowman on a piece of paper. Then, give directions like these for decorating the snowmen:

- If you're a boy, draw a green hat. If you're a girl, add an orange hat.
- If you're the oldest child, color brown eyes. If you're a middle child, make blue eyes. If you're the youngest, color green eyes.



- Draw buttons to equal your age (6 years old = 6 buttons).

Help them make a key for their glyphs (boy = green hat, girl = orange hat). Finally, hang up the snowmen—they're a great way to show how unique each child is!

Note: Use different shapes (kites, baseball diamond) to make glyphs that fit the season or your family's interests.

OUR PURPOSE

To provide busy parents with practical ways to promote their children's math and science skills. Resources for Educators, a division of Aspen Publishers, Inc. 128 N. Royal Avenue • Front Royal, VA 22630 540-636-4280 • rfeustomer@wolterskluwer.com www.rfeonline.com ISSN 1942-910X

SCIENCE LAB Static electricity

Try this experiment to teach your child about static electricity.

You'll need: a mirror, a balloon (blown up and tied)

Here's how: Have your youngster stand in front of a mirror, rub the balloon on her hair for about 15 seconds, and move the balloon slowly away from her hair. After a few seconds, she should move the balloon back toward her hair—without having the balloon touch her hair.

What happens? When she moves the balloon away, strands of hair will "fly away" toward the balloon. When she moves the balloon back toward her hair, strands of hair will again move toward the balloon.

Why? When the balloon rubs against hair, it creates *static electricity* because the hair and the balloon have opposite electrical charges—and opposites attract. This causes the balloon and hair to move toward each other.

Tip: This experiment works best with clean hair and on a dry day.



PARENT TO PARENT Family math night

Our school's Family Math Night was so much fun that we decided to try a math night at home. I talked to Eli's teacher, and she gave me ideas for "counting stations."

First, I numbered the cups in an empty egg carton 1–12 and put out a bag of dry beans. We took turns counting beans into each section—1 bean in the "1" cup, 2 beans in the "2" cup, and so on.



At another station we matched coins to grocery coupons. Eli was excited when he figured out four ways to make 10 cents: 10 pennies, 1 nickel and 5 pennies, 2 nickels, or 1 dime. The third station was "skip counting." Using old magazines, we cut out pictures of pairs like shoes, gloves, and eyes and used them to count by 2s.

Our math night was so successful, we're already planning another one. Next up: addition!