

Math+Science Connection

Intermediate Edition

Building Understanding and Excitement for Children

October 2012

Sweetbriar Elementary School



INFO BITS

More or less

The symbols for more than ($>$) and less than ($<$) can be confusing. Try this. Write two numbers side by side (22 34). Have your child put a dot by the smaller number (22·) and two vertical dots by the larger number (:34). He can connect the dots into the correct symbol: 22 $<$ 34. He'll see that the arrow always points to the smaller number!

Hot air balloon

With a few household materials, your youngster can create a hot air balloon. Here's what she needs: a small plastic bag, a paper cup, string, a hole punch, scissors, masking tape, and a hair dryer. Encourage her to design, test, and redesign until her hot air balloon lifts off the ground. How high can she get it to fly? For how long?

Web picks

At subtangent.com, your child can play math vocabulary games, stretch his brain with logic problems, and explore probability.

Learn how facial recognition software works, build a pipeline out of paper, and more at wonderville.ca.

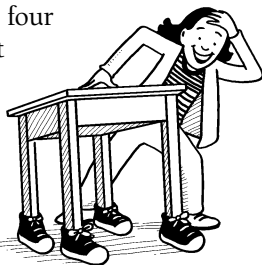
Worth quoting

"Somewhere, something incredible is waiting to be known." *Carl Sagan*

Just for fun

Q: What has four legs but can't walk?

A: A table!



A walk outside

Take advantage of the beautiful fall weather to show your child the math that exists in nature. Try these ideas.

Find symmetry in leaves.


Let your youngster collect a variety of fallen leaves and see which ones are symmetrical. (A line of symmetry divides an object into halves that are mirror reflections of each other.)

To check, she can fold each leaf in half—if it lines up evenly, it is symmetrical. Or she could put the leaf on paper and trace around it with a pen. Have her flip the leaf over and place it on the outline—if it fits, the leaf is symmetrical.

Measure pumpkins. A trip to a pumpkin patch is a fun fall activity that can yield math lessons. Take along string, scissors, and a tape measure, and have your child find the distance around the widest part of a few pumpkins. She can wrap the string around each one, cut it to fit, and use the tape measure to measure the string. If you're taking a few pumpkins home, have her consider their weight. Will the widest pumpkin also be




the heaviest one? Let her watch the scale at checkout to find the answer.

Compute a tree's age. Take a walk to look for tree stumps, and ask your youngster to count the rings. You can explain that each year trees grow a new layer of wood cells just inside the bark—so the number of rings tells the tree's age. The rings can also give hints about the weather: they're thinner in years with little rainfall or very low temperatures during the spring growth season. Have your child count the number of thin rings and the number of thick rings. Are there more thick or thin rings? How many more? *Idea:* To interpret the data, suggest that she write a story about the tree's life. 

Ocean waves

Your youngster can experiment with ocean waves right in your own home. Here's how.

Let him fill a disposable aluminum roasting pan with water and drop in a cork. Ask him to tap the side of the pan and watch closely. The waves will spread out from where he tapped, and the cork will bob up and down—but it won't move across the pan.

This is what happens with waves in the ocean. The mass of the water does not move forward and backward. Instead, the molecules bump into each other, and the motion (or energy) is transferred. The water actually stays in place—except for going up and down—and the waves are a transfer of energy. 



Dollars and cents

Learning about money is not only part of math class, it's an important life skill. Your youngster can get practice in everyday situations with these suggestions.

Order a meal


When you're ordering from a restaurant or carryout menu, give your child a budget for his meal, including tax and tip. He'll need to figure out how much his food and drink will cost and then compute sales tax and tip on that amount.



Save money

If you're going to the movies, an amusement park, or a museum that charges admission, let your youngster research the prices and determine the least expensive option. For instance, he could deduct student discounts and figure out the total for your family. Or he might look for group rates and find the cost per person if you invite friends along.

Be the cashier

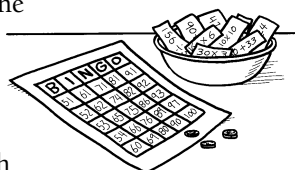
When you pay for things in stores, ask your child to figure out how the cashier could make change using the fewest possible bills and coins. For example, if you use a \$20 bill for a \$16.73 purchase, he would say, "Three dollar bills, one quarter, and two pennies." *Tip:* Have him look away while you're getting the change so he has time to figure out his answer. 


MATH CORNER

B-I-N-G-O

Turn bingo into a night of family math fun! Playing—and making—this game will help your child work on addition, subtraction, multiplication, and division skills.

First, everyone can make bingo cards out of construction paper (draw grids with 6 rows and 5 columns and write the letters "B-I-N-G-O" across the top boxes). Then, put random numbers from 51 to 60 under B, 61–70 under I, 71–80 under N, 81–90 under G, and 91–100 under O. On separate slips of paper, players should write a math problem to equal each number on their cards ($93 - 17 = \underline{\quad}$, $9 \times 7 = \underline{\quad}$). Put all the slips in a bowl.



To play, the "caller" pulls out slips one at a time and reads the problem. If a player has the answer on her card, she covers it with a penny. The first one to get five in a row (down, across, or diagonal) wins that round. Trade cards, and play again. Or for even more practice, make new cards and problems. 

SCIENCE LAB

Lung capacity


This activity will let your child measure how much air her lungs can hold.

You'll need: glass, water, bowl, straw, measuring cup

Here's how: Have your youngster fill a glass to the top with water. Then, she can place the glass in a bowl (to catch spills) and put the straw in the water. She should take a deep breath and slowly blow all the air out of her lungs into the straw.

What happens? As she blows into the straw, water spills out of the glass.

Why? The air she blew displaced water in the glass. The amount that spilled out is about the volume of air that was in her lungs. To figure her lung capacity, she can measure the water that spilled into the bowl.

Idea: Ask other members of your family to try the experiment. Do their lungs hold different amounts of air? 



PARENT TO PARENT


Getting involved at school

At back-to-school night, I was about to sign up to volunteer in the library and to assist with my son's writing workshop. Then, I realized that I always help with reading and writing activities, but not with math.

I scanned the list of volunteer opportunities and noticed that the math club needed parents to help, so I checked that one. Once my son heard that, he decided to sign up for the club.

I also said I would volunteer during math period in my son's classroom. Now that I see how the concepts are being taught, it's easier for me to understand the homework and papers that he brings home.

My friend who works full time was glad to see there were things she could do from home, too.

She is preparing materials for math bulletin boards, and she's going to volunteer at our school's family math night—and I think I will, too! 



OUR PURPOSE

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

Resources for Educators,
a division of CCH Incorporated
128 N. Royal Avenue • Front Royal, VA 22630
540-636-4280 • rfeustomer@wolterskluwer.com
www.rfeonline.com