

Math+Science Connection

Building Understanding and Excitement for Children

Lincoln Elementary School
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INFO BITS



Habitat for rent

Help your child think about what animals need to survive (shelter, food, water). Then, have her choose an animal (monkey) and write a classified ad for a home that will meet its needs. *Example:* "Tall tree in a tropical rain forest. Large river nearby for drinking. Plenty of leaves, fruit, and insects to eat."

Counting practice

Have your youngster practice counting by 10s—but start at a number that doesn't end in zero. For instance, begin at 787 and count by 10s (787, 797, 807). Try other numbers, too. *Examples:* Count by 3s, starting at 52 (52, 55, 58), or by 5s, starting at 92 (92, 97, 102).

Book picks

Hotel Infinity is fully booked, but there's always room for more. Read *The Cat in Numberland* (Ivar Ekeland) for a clever introduction to infinity.

Learning about the solar system is fun when planets tell the story themselves. Dan Green's *Astronomy: Out of This World!* contains fascinating facts and details along with cartoon illustrations your child is sure to love.

Worth quoting

"Wondering is the seed of genius."
William Mocca

Just for fun

Q: Why did the man water only half of his lawn?

A: Because he heard there was a 50 percent chance of rain.



Math at the grocery store


Need to go food shopping? Why not turn it into an opportunity for your child to practice what he's learning in math. Here are some ideas.

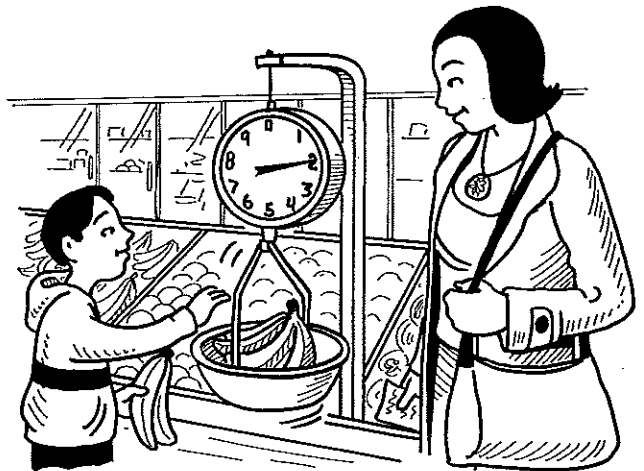
Weigh and multiply.

Fruits and vegetables are often sold by the pound. Ask your youngster to compute how much your produce will cost. For example, say you want 6 bananas and they cost 49 cents a pound. He would weigh them and multiply their weight by the cost per pound (2 lb. x 49 cents = 98 cents) to get the total cost.

Comparison shop. Let your child help you save money and learn to be a better consumer. Ask him to read unit-pricing labels on shelves to find the best value (8 cents per ounce for one brand of pasta sauce vs. 13 cents per ounce for another brand). Or he can look for the better deal: one box of cereal for \$2.79

or two boxes for \$5? ($\$5 \div 2 = \2.50 per box, so you'll save money buying two boxes and storing one for later.)

Estimate the total. Ask your youngster to predict your total bill by keeping track of what you put in your cart. With each item, he should check the price and round it up or down to the nearest dollar. As you go, he can keep a running tally on paper, in his head, or on a calculator. At checkout time, see how close he came. 




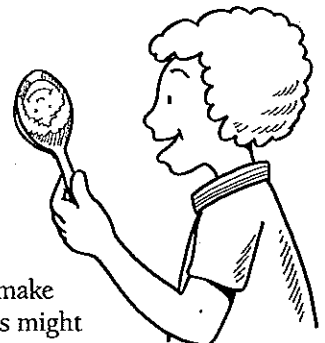
Look at me!

Help your youngster learn about the science of optics with this mealtime activity.

Have her look at herself in a clean spoon. What happens if she looks in the bowl of the spoon? (She's upside down.) What happens on the other side? (She's right side up.)

Next, have her bring her finger toward the spoon and watch what happens on each side. The bowl (the concave side) will magnify her finger, or make it look larger. The back (the convex side) will make her finger look smaller. Ask your child how scientists might use this information to make eyeglasses, cameras, or telescopes.

Tip: She can remember which side is which by thinking of concave as "caves in." 



What's the angle?

Learning about angles is an important step in understanding geometry. Try these suggestions with your youngster:

- Help her use her arms to demonstrate angles. For a *right angle*, she can stretch her left arm straight up and her right arm straight out to her side. An *acute angle* is smaller, so have her move her arms closer together. And an *obtuse angle* is larger than a right angle, so she should move her arms wider.
- Next, see how many angles your child can find in the alphabet. Have her print all 26 uppercase letters on a large sheet of



paper. With different-colored markers, have her mark right angles (one in "L," for example), acute angles (three in "A"), and obtuse angles (two in "X").

- Together, look for angles in the real world. Right angles will be easiest to find—they'll be in corners of rooms where one wall meets another, on window frames, or at the edge of a square sandbox. But your youngster will also be able to find angles that are acute (spokes in a bicycle wheel) and obtuse (a door that's wide open). Suggest that she make a three-column chart (name of object, type of angle, sketch of the angle) to record her findings. 📦

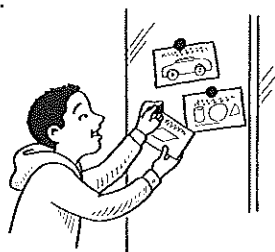
PARENT TO PARENT

Learning math words

My son Kaiden struggles with vocabulary. And since he's learning so many new math words this year, like *circumference* and *integer*, this problem was affecting his math work.

I talked to Kaiden's teacher, and she thought it would help to post the words where he could see them. She suggested that he write each word on an index card and illustrate it.

Kaiden and I talked about what each word reminds him of. For instance, car tires help him remember



that circumference is the distance around a circle, so he drew a car with tires on his *circumference* card.

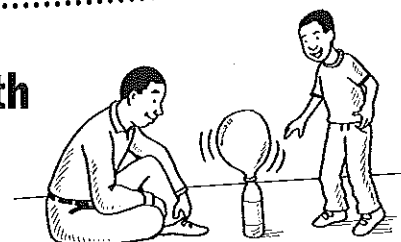
We hung the cards on the refrigerator so he could see the words every day. Once he masters a word, we take it down and add it to a pile on the counter. By associating the math words with something meaningful to him, he has been able to remember them more easily in class. And watching his stack of words grow seems to be giving him confidence. 📦



SCIENCE LAB

Save your breath

Your child can inflate a balloon without using his breath. A chemical reaction will do the job for him!



You'll need: empty plastic soda bottle (20 fl. oz.), $\frac{1}{4}$ cup water, 1 tsp. baking soda, uninflated balloon, lemon juice

Here's how: Have your youngster add the water and baking soda to the bottle, close the cap, and swirl it around until the water is cloudy. Then, help him stretch out the balloon and place the opening over the top of the bottle, leaving a small space. He should very quickly add a squirt of lemon juice, seal the balloon completely over the bottle, and shake lightly.

What happens? The balloon inflates.

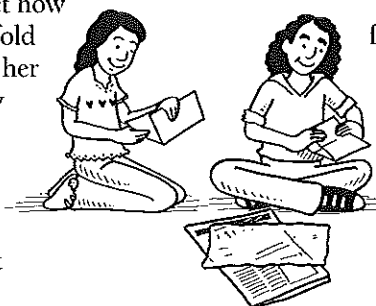
Why? When you mix an acid (lemon juice) with a base (baking soda), they create carbon dioxide. The molecules spread out as the gas forms, pushing against the walls of the balloon and causing it to inflate. 📦

MATH CORNER

Paper folding

How many times can your youngster fold a piece of paper in half? She will find out with this surprising activity.

Give her a piece of notebook paper, and ask her to predict how many times she can fold it in half. Then, have her test her prediction by folding the paper in half again and again until it won't fold anymore. She'll discover she can't fold it more than 6 times.



Have her try again with different sizes and types of paper (tissue paper, paper towel, newspaper). No matter the size or kind of paper, she won't be able to fold it more than 6, 7, or 8 times.

Ask your child if she can figure out why. *Hint:* It has to do with doubling. The first time she folds the paper, she'll have 2 layers. The next time, 4 layers, and so on... until 8 folds = 256 layers. The paper simply becomes too thick to fold again. 📦

OUR PURPOSE

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

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