

Math+Science Connection

Building excitement and success for young children

September 2008

TOOLS & TIDBITS

Tasty fractions

What's more fun than eating a snack? Eating a snack fraction by fraction! Help your youngster cut a sandwich in fourths (four equal pieces). As he eats each section, ask him what's left. Three pieces? "That's three out of four—or three-fourths."



Color search

Take your child on an outdoor color hunt. Ask her to find something red (bird), blue (flower), and green (leaf). She can record her findings by drawing pictures of each item in a notebook. She'll learn to be a good observer—an important skill for science.

Book picks

Guess What Is Growing Inside This Egg (Mia Posada) uses clever rhymes to describe alligators, ducks, sea turtles, and more. Can your youngster figure out which animal each poem describes?



Read *The Doorbell Rang* by Pat Hutchins for a humorous look at division. Ma bakes a dozen cookies for her two children. But the doorbell keeps ringing, bringing more guests to share the cookies. (Also available in Spanish.)

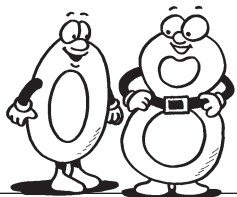
Worth quoting

"The scientist is not a person who gives the right answers, he is one who asks the right questions." *Claude Lévi-Strauss*

Just for fun

Q: What did zero say to eight?

A: Nice belt!

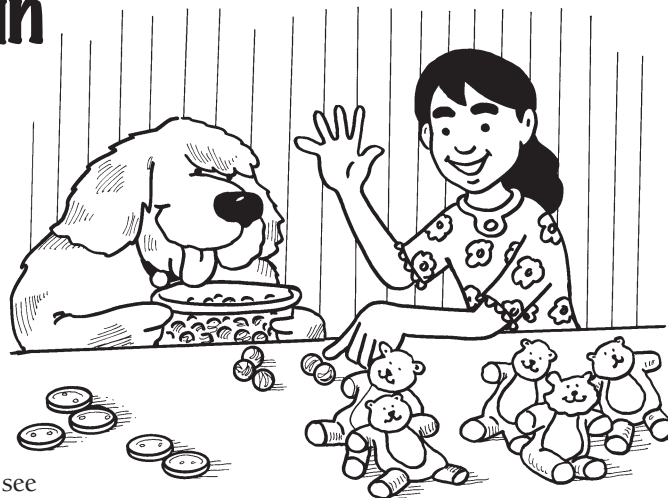


2 + 2 = Fun

Learning to add numbers is as easy as 1, 2, 3 with these simple steps. Give your child lots of practice, and she'll have a head start on important math skills like subtraction, multiplication, and even algebra.

1 Adding with "fun stuff" (buttons, teddy bears) lets your youngster see how addition works. For example, ask her to put 2 marbles in one pile and 3 marbles in another pile. Have her count them all together. When she announces, "5 marbles," tell her, "You've just added 2 plus 3!" Take turns making addition problems with her favorite toys.

2 Move on to pencil-and-paper addition by having your child draw smiley faces, boxes, or letters. She might make 4 smiley faces on the left side of a sheet of paper and 2 smiley faces next to them.



Show her how to put a plus sign between the two sets and an equal sign at the end. How many smiley faces are there? She can point to each smiley face as she counts to 6 and then draw 6 of them for her answer.

3 Finally, have your youngster use numbers. For instance, she could write $2 + 4 = \underline{\quad}$. Then, she can count out items or draw pictures to show her problem. When she has the total, she can fill in the answer (6). With regular practice, she will soon learn all the addition facts! 🐛

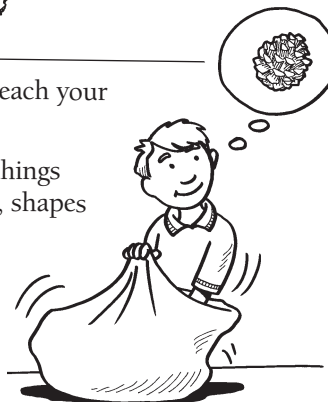
Sense of touch

What do our fingers tell us? Try these ideas to teach your youngster about his sense of touch:

- Together, brainstorm words that describe how things feel. You might talk about textures (hard, squishy), shapes (round, square), and edges (curvy, straight).

- Put familiar objects (pine cone, tennis ball, feather) into a pillowcase. Have your child reach in without looking and describe each one by touch (fuzzy, bumpy, soft). Can he identify them? *Note:* Be sure not to use sharp objects.

- Let your youngster put on a pair of gloves and reach in again. How much can he tell about the items now? Explain that we feel things through "receptors" in our fingers—and gloves make those receptors less sensitive. 🐛



Sink or float?

Why does a boat float in a lake while a rock falls to the bottom? Help your youngster discover the answer in his own kitchen sink!

Start by filling the sink with water. Have your child gather a variety of items to test (sponge, toy car, key, wood block). On a sheet of paper, help him write the name of each object and predict “sink” or “float.” After dropping each one in the water, he can record the answer.

You can explain to your youngster that objects float when they push enough water out of the way and sink when they don't. Objects that are more “dense” (rocks, coins) will sink



because they don't push enough water out of the way to float. Less dense objects (wood, cork) will float because they do push enough water out of the way.

Sinking and floating also have to do with an object's shape. Let your child test this out for himself by shaping a ball and a canoe

out of the same amount of clay. What happens? Tell him the boat floats because it's hollow and its shape is more spread out, so more water is holding it up. The ball sinks because it's squeezed into a smaller shape, and there's less water trying to support it.

MATH CORNER

Everyday measuring

Make measuring a part of your child's daily life, and she'll understand basic math concepts—and gain important life skills. Here are some suggestions:

▲ When you finish dinner, ask her to put away the leftovers. She'll learn about volume (the space taken up by something) as she decides which size container to use for leftover rice or green beans.



▲ Have your youngster be the “measurer” when you're cooking or baking. Let her use measuring cups and spoons, and encourage her to say the measurement's name. *Example:* “Here is ½ cup of flour.”

▲ How long is your child's bed? How tall is her desk? Help your youngster make her own “ruler” and find out. Trace her foot on a piece of cardboard, and cut it out. Then, she can use her “foot ruler” to measure everything around the house!



SCIENCE LAB

Music time

Your child will learn about sounds and vibrations when she makes—and plays—her own flute.

You'll need: 9 plastic straws, ruler, scissors, cardboard, tape

Here's how: Help your youngster use a ruler to measure and cut the straws into different lengths (8, 7½, 7, 6½, 6, 5½, 5, 4½, and 4 inches). Let her line them up from longest to shortest, with the ends even at the top. Then, help her cut the cardboard into two rectangles, and tape the straws in between them, like a sandwich. Now she can play her flute by blowing across the top of the straws.

What happens? Each straw will produce a different sound, or pitch. The longer the straw, the lower the pitch will be.

Why? The longer columns of air in the longer straws vibrate more slowly, creating a lower sound frequency. The shorter columns of air vibrate faster, making a higher frequency.



PARENT TO PARENT

Making sense of cents

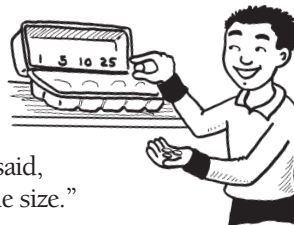
After his soccer game, my son Jeff tried to pay for his snack. When I saw that he wasn't sure how much each coin was worth, I asked his teacher for ideas on practicing at home.

She suggested that I empty my coin purse and have Jeff look carefully at the coins. I asked him how they were the same or different.

“They're all round,” he said, “but they're not the same size.”

I told him how much each one was worth, and together, we lined them up in order by value. He thought it was funny that the smallest coin—the dime—wasn't the smallest value!

Then, I had Jeff write the amount for each coin in a compartment of an empty egg carton. He matched the coin values by dropping pennies, nickels, dimes, and quarters in the right spots. Now he loves sorting coins—and he's learning more about money every day.



OUR PURPOSE

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

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