

# Math+Science Connection

Beginning Edition

Building Excitement and Success for Young Children

September 2013



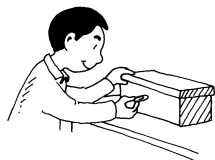
## TOOLS & TIDBITS

### Make it real

Using real objects to work through math problems can be a big help. For instance, if your youngster is adding  $5 + 3$ , she could get 5 forks and 3 spoons. Have her count the forks ("1, 2, 3, 4, 5") and then "count on" with the spoons ("6, 7, 8"). Seeing the math in action will help her understand it better.

### Find the magnet

Tape a magnet inside a shoe box, and seal the box.



Then, ask your child to use a paper clip to find the magnet. (He should

move the paper clip around the outside of the box until he feels it being pulled—or *attracted*—to a certain spot.) Can he tell how big the magnet is or what shape it is?

### Book picks

▣ *Ten Black Dots* (Donald Crews) presents a fun way to count to 10. After reading the book, encourage your youngster to make her own dot pictures!

▣ Why is dirt important? Your child will learn all the facts in *Jump into Science: Dirt* (Steve Tomecek). Discusses different types of dirt, what lives in dirt, and how dirt is formed.

## Just for fun

**Q:** What does a bear become after it's three years old?



**A:** Four years old.

## Number, please

What does the number 4 mean? How does 9 relate to 8 or 10? While these questions may seem easy to you, your child is just learning to understand numbers. Here are everyday ways you can support him.

### Find objects

Ask your youngster to name his favorite number. Then, challenge him to find items to match. If he says 6, he might get 6 pennies, a 6 of diamonds from an old deck of cards, and 6 stickers. With construction paper and tape, he could make them into a "6s collage." *Tip:* Suggest that he make a collage for other numbers up to 20.

### Guess the number

Play "What's my page number?" Open to a random page in a book or magazine, and give your child hints to figure out the page you're on. You might say, "My page number is 2 less than your age," or



"Add together  $14 + 4$ , and you'll get my page number." Let him give you ones to guess, too.

### Spot the sequence

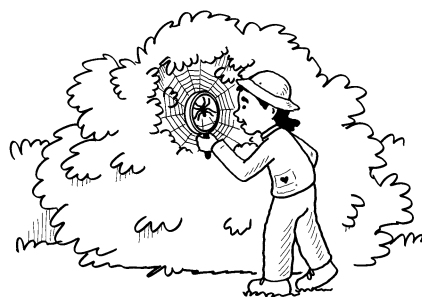
Walk down the street, and have your youngster read the house numbers. See if he can spot a pattern (the numbers might skip by 2s or 4s). Or maybe the numbers are all even. Then, walk back on the other side of the street. What does he notice about those numbers? (Perhaps they're all odd.) He'll practice recognizing and reading numbers—and learn about the relationships between numbers. 🦋

## Spinning a web

Together, look for a spiderweb outside in the bushes or in your basement or garage. Then, try these ideas:

- Have your youngster peer closely to notice the web's lines and shape. Let her use a magnifying glass to observe the spider, describe what its body looks like, and count its legs (8). Ask where the spider's skeleton is—on the outside or inside?

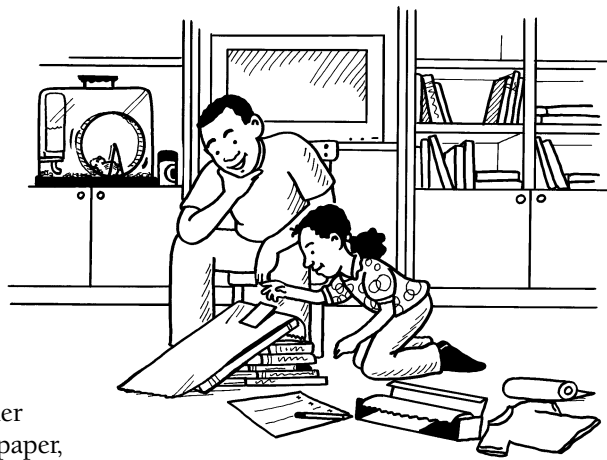
- Let your child create her own web with a paper plate and yarn. Make notches around the edges of the plate, and ask her to "weave" the yarn through the notches and over the plate. *Idea:* If she has a toy spider, she could attach it to her web. 🦋



# Will it slide?

With a cardboard “sled” and a ramp made of books, your youngster can gather data and test engineering principles. Use these steps.

**1.** Help her cut a small rectangle of cardboard as her sled. Then, have her build a ramp by stacking several books and leaning another book against them. Finally, let her gather materials like felt, aluminum foil, wax paper, sandpaper, and a cotton T-shirt.



**2.** She can cover the ramp with each material, one at a time, and place the sled at the top. Before each test, ask your child to predict if her sled will make it to the bottom. Help her create a chart to record her predictions and the results. (She could draw three columns for “Material,” “Prediction,” and “Result.”)

**3.** Can she think of ways to improve the chances for the materials that don’t work? *Hint:* She might raise the ramp by adding books.

*Science lesson:* This experiment demonstrates friction. Friction is created when moving objects touch a surface—the less friction there is, the faster the ride will be.

## SCIENCE LAB Primary colors



Experimenting with color will teach your child an astounding fact: the whole world is made up of red, blue, and yellow!

**You’ll need:** cups, water, paper towels, markers

**Here’s how:** Help your youngster cut eight circles from the paper towels (large enough to sit on top of the cups). Then, have him draw a large dot on each circle, using a different-colored marker for each one (purple, green, brown, orange, black, red, blue, yellow). Finally, he should place each circle on a cup and sprinkle water on the ink.



**What happens?** The ink separates into the original colors that made up that color. For instance, a purple dot will separate into red and blue.

**Why?** Red, blue, and yellow—the primary colors—mix together to make all the other colors. When the water and ink combine on the paper towel, the colors that were mixed together come apart.

**OUR PURPOSE**

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

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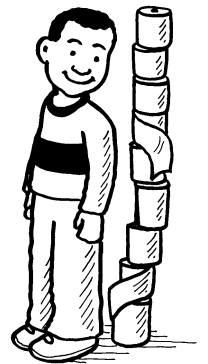
## Q & A Make math fun!

**Q:** It’s easy to make reading fun for my son, but how can I make math fun for him, too?

**A:** There are so many ways to have fun with math at home! Here are just a few.

Let your child figure out his height—or yours—in unusual ways. For instance, how many rolls of toilet paper tall is he? What else could he use to measure his height?

Give him a calculator, and suggest he keep adding the same number to see what happens. Then, challenge him to make the biggest number possible. Or play “Race the calculator.” Call out a problem he can do, such as  $2 + 3$ . You enter it on the calculator, while he shouts out the answer. Chances are he’ll beat you—in the time it takes you to punch in the numbers, he’ll have said, “5!”



## MATH CORNER Name my shape

Turn your youngster into a solid-shape expert with these activities-in-a-bag: bottom, and a tissue box could have squares or rectangles.

**Bag of shapes.** Have her draw and cut out shapes (circle, square, triangle, rectangle) and drop them in a bag. When you’re doing errands, she can take the bag along and search for those shapes in 3-D objects. For instance, a soup can has circles on top and



**Bag of clues.** Ask each family member to secretly place a 3-D object inside a paper bag and write three clues on the outside. If you hide dice, for example, you might write, “We each have 6 sides. Our sides are all squares. We each have 8 vertices (corners).” Swap bags, and name the shape (cube).