

# Math+Science Connection

Beginning Edition

Building Excitement and Success for Young Children

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## TOOLS & TIDBITS



### Make the number

Write a number at the top of a page. Underneath, have your child represent the number in as many ways as possible. For a younger child, you might use 4. He could draw 4 basketballs, make 4 dots, or write  $2 + 2$ . For an older child, write a double-digit number like 18. Then, he might list  $9 + 9$ ,  $20 - 2$ , or  $3 \times 4 + 6$ .

### Science tool kit

Having her own science kit can encourage your youngster to explore her world. She could label a shoe box or plastic container ("Mia's Science Kit") and include paper, pencils, crayons, a magnifying glass, binoculars, a ruler, a compass, and a magnet. Together, add a list of activities to try (observe a caterpillar and draw its picture, find five magnetic objects).

### Book picks

What makes teams equal? Read *Equal Shmequal* (Virginia L. Kroll) to help your child find out.

*Will We Miss Them? Endangered Species* (Alexandra Wright) will fascinate your youngster—and so will the fact that it was written by an 11-year-old girl. (Also available in Spanish.)

### Worth quoting

"It is little by little that a bird builds its nest." *Nigerian proverb*

## Just for fun

**Q:** How do you get a zebra to fly?

**A:** Buy it an airline ticket.



## Let's do algebra!

Algebra for little ones? Why not! With these ideas, your child will enjoy playing with math—and get an early start on the road to algebra.

**Pattern tube.** Algebra involves number patterns and predictions. Try this: Link together Lego blocks in a pattern (example: red, red, yellow, green, red, red, yellow, green). Slide the stack through an empty toilet paper roll, revealing one block at a time to your youngster. When she thinks she knows the pattern, ask her to predict the next four colors. Was she right? Then, let her make a pattern tube for you.

**Bag of 10.** Have your child put 10 small items (dice, game pieces) in a bag. Take a handful, and say, "I have 6 pieces. How many are still in the bag?" She can count the objects to see if her answer is correct. Then, help her write the equation formed ( $10 - 6 = 4$ ). You can play other ways, too. Tell her how many pieces are left in the bag (7)—this time she has to say the number in your hand (3). Or take a



handful and say, "I'm not sure how many I have." She can count the pieces in the bag (2) and tell you how many are in your hand (8).

**Sticky equations.** Cut a piece of construction paper into strips. On each one, write an equation, such as  $12 + 5 = 17$ . Cover one number (5) with a sticky note, and ask, "What number is underneath?" Your youngster might think, "How many more is 17 than 12?" She could count ("13, 14, 15, 16, 17") to find the answer (5). Take turns putting sticky notes on equations and figuring out the hidden number.

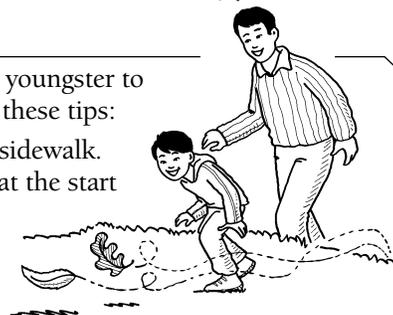
## Wind power

On a windy March day, go outside with your youngster to discover—and enjoy—this force of nature. Try these tips:

- Mark a start and finish line on the grass or a sidewalk. Then, each of you can pick up a leaf and put it at the start line. Have your child watch to see how wind gusts carry the leaves through the air. Whose leaf will win the race?

- Let your youngster gather objects outside, such as an acorn, a pebble, a blade of grass, and a pinecone. When the wind kicks up, he can toss them into the wind. Which one goes farthest? What does he think makes the difference (size, shape, weight)?

*Idea:* Discuss how wind can be used for energy. For instance, wind carries sailboats across water.



# Super shapes

From mealtime to playtime, you can make geometry a fun part of your youngster's day. Here's how.

## Mealtime

Jigsaw puzzles teach spatial reasoning and problem solving. Cut your child's sandwich or quesadilla into puzzle pieces, and mix them up on a plate. His challenge is to put the puzzle back together before eating! Or let him make shapes out of his food. He



might cut a slice of cheese into a circle or roll a piece of deli meat into a cylinder. Ask him to name and describe the shapes he forms. *Example:* "This is a circle. It doesn't have any sides or corners."

## Playtime

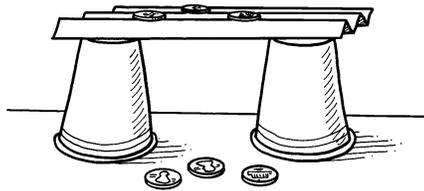
For this activity, you'll need a Styrofoam block (from a craft store), push pins, and rubber bands. Help your youngster create a triangle by putting three push pins into the cube and looping three rubber bands around them—one for each side of the triangle. Can he make a rectangle (four pins and four rubber bands)? The pins will be the vertices (corners), and the rubber bands will be the sides. See how many different shapes he can make. 🦋

## SCIENCE LAB

## Building bridges

Let your child practice the basic steps of engineering—design, build, test, and redesign—as she tries to make a stronger bridge.

**You'll need:** 2 plastic cups, paper (cut in half lengthwise), ruler, pennies



**Here's how:** Have your youngster turn the cups upside down (5" apart) and lay the paper across them. Ask how many pennies she thinks she could put on the "bridge" before it falls down. Then, she can place them, one at a time, and count the number. Suggest that she fold paper different ways and test its strength. For instance, she might fold paper accordion-style, fold it in half, or fold up the sides. She could also use more pieces of paper or change the distance between the cups.

**What happens?** Different designs will hold different numbers of pennies.

**Why?** The design of a structure affects its strength. *Idea:* Ask your child why she thinks one design is stronger or weaker than another. 🦋

## OUR PURPOSE

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

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## Q & A

## Good at math

**Q:** My daughter says she's just not good at math. Is it true that some kids are good at math and some kids aren't?

**A:** That is a common belief, but no, it really isn't true. And interestingly, studies show that we're usually "good" at the things that we think we're good at. So confidence can have a lot to do with how children perform in school subjects.

Give your child lots of opportunities to use math successfully. At the store, have her compare prices—show her two price tags, and ask which item costs more. Let her be the scorekeeper for games. Have her measure ingredients when you cook. You can boost her confidence by saying, "See, you can do math!"

Also, show an interest in her math schoolwork. Look over papers she brings home. Ask her to explain how she got her answers for math homework. By supporting her, you'll show her that you think she's good in math, and then she's likely to think so, too. 🦋



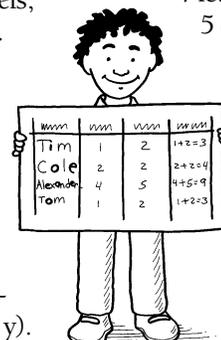
## MATH CORNER

## Names and numbers

When are vowels and consonants a way to build math skills? When your child uses them to count and add. Follow these steps.

**1.** Help your youngster make a chart with four columns: Name, Vowels, Consonants, Number Sentence.

**2.** He can write his name and the names of friends or family members down the first column. In each name, have him highlight the vowels in one color and the consonants in another color. *Hint:* Make sure he knows which letters are vowels (a, e, i, o, u, and sometimes y).



**3.** Ask him to count the number of vowels and consonants in each name and record them. Then, he should write the number sentence adding up the total letters in each name. For example, *Cole* has 2 vowels and 2 consonants, so  $2 + 2 = 4$  letters. *Alexander* has 4 vowels and 5 consonants, or  $4 + 5 = 9$  letters.

**4.** Let him look at his sheet and make comparisons. Which name has the fewest vowels? The most consonants? Which name has the most letters?

*Tip:* For practice with bigger numbers, he could use last names, too. 🦋