

# Math+Science Connection

Beginning Edition

Building Excitement and Success for Young Children

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## TOOLS & TIDBITS

### Tall vs. wide

Does a tall, narrow glass hold the same amount of liquid as a short, wide mug? Encourage your child to find out. He can measure water into each, 1 cup at a time, until they're



full—counting as he goes. Which one holds more? Now he can try again with two different containers.

### What's the weather today?

Let your youngster match clothes with the weather while she pretends to be a meteorologist. Have her read the forecast in the newspaper or online each day. Then, she can announce the weather and recommend clothing to family members. ("Today will be partly cloudy with a high of 50 degrees, so take your jacket!")

### Book picks

📖 In *Now What? A Math Tale* (Robie H. Harris), a cute puppy learns about shapes as he tries to build a bed out of blocks.

📖 A class takes action to help baby sea turtles in *Follow the Moon Home: A Tale of One Idea, Twenty Kids, and a Hundred Sea Turtles* (Philippe Cousteau and Deborah Hopkinson).

## Just for fun



**Q:** What gets wetter the more it dries?

**A:** A towel.

## DIY number lines

Number lines are the perfect way for your child to see numbers in action. By creating and using her own number lines, she'll learn to compare numbers, see where they fit in, and even add and subtract. Here are three clever activities you can do together.



### Line up sticks

Let your child number 11 craft sticks, 0–10, and put them in a cup. Have her pull out three sticks (say 4, 10, 3) and arrange them in order (3, 4, 10). Then, take turns drawing a new stick (perhaps 8), and putting it where it belongs (between 4 and 10, but closer to 10). When you have all the numbers, ask her to check that they're in the right order—and to rearrange any if needed.

### Roll and move

Play a number-line game. Help your youngster put a strip of tape on the floor and write the numbers 0–20 along it, evenly spaced. Each player should place a

small toy at 0. On each turn, roll a die, move your toy that many spaces, and say the addition problem. If your child's first roll is a 2, she would say "0 + 2 = 2." Reach 20 first to win, then play from 20 to 0 for subtraction practice.

### Find the spot

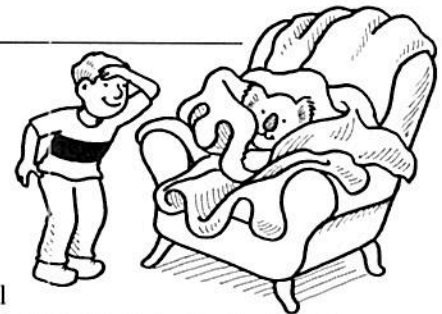
Ask your child to count by 10s from 0 to 100 and write each number on a separate sticky note. Have her stick the numbers in order on a wall, evenly spaced. Then, take turns writing random one- or two-digit numbers on new sticky notes for each other to add to the line. Where would your youngster put 44? (It goes between 40 and 50, but closer to 40.)

## Animal hide-and-seek

Animals like lizards and chipmunks are naturally good at hiding from predators. That's because their colors match their habitats. Play this version of hide-and-seek to show your child how camouflage helps animals hide.

Have your youngster close his eyes while you secretly choose a stuffed animal and hide it in a place that matches its color. You might tuck a koala into a gray blanket or put a polar bear between two white pillows.

Challenge him to find the animals. Then, hide them again in spots that don't match their colors. Is it easier or harder for him to see them? Now it's your child's turn to use camouflage to hide animals for you to find.



# Math talk

“How many strawberries would you like?” “What is today’s date?” Try the following ideas to weave math into conversations with your child.

**Ages.** “I’m the youngest of all my cousins!” Use cousins’ and siblings’ ages to help your youngster compare numbers. Talk about who is older and younger, and help him figure out age differences. (“Your brother is 13, and you’re 6. How many years older is he?”)



**Addresses.** When you’re out together, look for three- and four-digit numbers on houses, mailboxes, or curbs. Let your child read them aloud: “three hundred fifty-eight” for 358, and “six thousand seven hundred ninety-two” for 6792.

**Food packages.** At snack time, keep the bag or box on the table for a chat about nutrition labels. You might say, “There are 4 crackers in 1 serving. How much sodium does 1 serving have?”

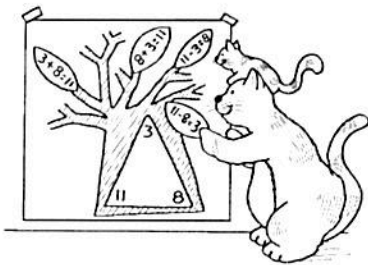
**Board games.** Game night offers many opportunities to discuss math. When you roll dice, say the addition problem aloud (“I rolled 4 and 6, and  $4 + 6 = 10$ ”), and count the spaces as you move your token. Encourage your youngster to do the same.

## Q & A Fact-family trees

**Q:** My daughter is learning about “fact families.” This sounds like fun! How can she practice at home?

**A:** A fact family is a group of math problems that share the same numbers. For instance,  $4 + 5 = 9$ ,  $5 + 4 = 9$ ,  $9 - 5 = 4$ , and  $9 - 4 = 5$  are a fact family.

Suggest that your child make “family trees.” For each fact family, she could draw a bare tree on paper and cut out four green paper leaves. Encourage her to choose two single-digit numbers (say, 3 and 8) and use them to write related facts on the leaves ( $3 + 8 = 11$ ,  $8 + 3 = 11$ ,  $11 - 3 = 8$ ,  $11 - 8 = 3$ ). Then, she can glue all the leaves to the tree and label it with the family’s “name” (the three numbers in a triangle).



Encourage her to create more fact-family trees—until she has an entire fact-family forest!

### OUR PURPOSE

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

### Ready for fractions

Exploring equal parts lays the foundation for the fractions your youngster will learn about when he’s older. Enjoy these activities together.

• **Spot equal parts.** Encourage your child to look around the house for items divided into halves, thirds, and fourths. He might find a loveseat with two cushions (halves), a tub of Neapolitan ice cream with three flavors (thirds), and a staircase with four steps (fourths).

• **Draw pictures.** Suggest that your youngster use art to show equal parts. For example, he could sketch a four-leaf clover (fourths), a pizza with six slices (sixths), or a Ferris wheel with eight carriages (eighths). Ask him to tell you about his drawings so he gets a chance to use fraction words.



## SCIENCE LAB

### Shiny pennies

Find a penny, pick it up—and try this chemistry experiment. Your child will discover how to make dull pennies shine.

**You’ll need:** tablespoon, vinegar, dish soap, 2 empty jars, 9 dull pennies, masking tape, marker, timer, towel

**Here’s how:** Help your youngster measure 2 tbsp. vinegar into one jar and 2 tbsp. dish soap into the other, then label the jars with the tape. She can drop 3 pennies into each jar, place 3 pennies on the

counter, and set a 30-minute timer. When time’s up, she should remove the pennies from the jars, dry them off, and compare the 3 sets of pennies.

**What happens?** The pennies soaked in vinegar are shinier than the others.

**Why?** Copper in pennies plus oxygen in the air form a chemical (copper oxide) that dulls pennies. Vinegar dissolves copper oxide—and the pennies become shiny again.

