

# Math+Science Connection

Intermediate Edition

Building Understanding and Excitement for Children

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## INFO BITS

### Don't miss the (decimal) point

Give your child experience adding and subtracting decimals by collecting loose change. Every week or so, dump out the change and take turns giving each other instructions. She might say, "Add any five coins together." Or maybe you'll have her total all the quarters and all the dimes and then find the difference.

### Label me a scientist

Challenge your youngster to look at the world the way a scientist would. Take a walk, and suggest that he sketch natural objects, labeling each part of his picture. For a tree, he might label the trunk, limbs, leaves, and roots. Labels for a cardinal could include the beak, feet, tail, and crest.



### Web picks

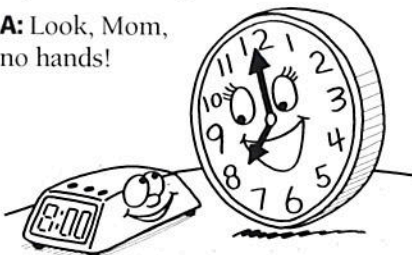
☑ Your child can play math games involving counting, geometry, fractions, graphing, and more at [math.rice.edu/~lanius/Lessons/](http://math.rice.edu/~lanius/Lessons/). Some games are available in Spanish, too.

☑ At [chainreactionkids.org](http://chainreactionkids.org), youngsters will find instructions for molding fossils out of clay, exploring the life cycle of a fruit fly, and more.

## Just for fun

**Q:** What did the baby digital clock say to the analog clock?

**A:** Look, Mom, no hands!



## Let's multiply and divide

How much wood can a woodchuck chuck if a woodchuck chucks 5 pieces every day for a week? Your youngster can use multiplication to figure out the answer! These activities let him practice multiplication—and its opposite, division.

### Three-way concentration

Have your child write eight multiplication problems with each *factor* (number that's being multiplied) and *product* (answer) on a separate index card. For  $3 \times 6 = 18$ , he would make cards for 3, 6, and 18. Place the cards facedown with products in one row and factors in another. Then, play these games.

• **Multiplication:** Take turns flipping over two factors (say, 4 and 5). Multiply, then flip over a product card—if it's the right one (20), keep the cards. When all cards are used or you can't make any more problems, the player with the most matches wins.

• **Division:** On each turn, flip over one product (18) and one factor (3), and try to find the missing factor (6, since  $18 \div 3 = 6$ ).



### Lego wall

Encourage your youngster to multiply and divide as he builds with Legos.

• **Multiplication:** Roll two dice to determine the size of a Lego wall. *Example:* Roll 6 and 5, and make a wall 6 Legos tall and 5 Legos wide. Then, he could multiply to tell how many Legos are in the wall (30, because  $6 \times 5 = 30$ ).

• **Division:** Let him form any size Lego wall. Ask him to count the bricks in the wall (say, 28) and in a single row (7). How many rows are there? (4, because  $28 \div 7 = 4$ .)

## What's that smell?

A whiff of cinnamon or a fireplace can remind your child of winter. That's because her *scent receptors* send a message to her brain. Then, her brain responds by identifying the smell and, often, associating it with a memory. Try this.

Let your youngster gather several items with "wintry" smells (cookie, pine needle, cinnamon stick). Have her blindfold family members and wave an item under each person's nose. Now, remove your blindfold, and write down what you think the object was and a memory it brings to mind.

Invite everyone to share what they wrote. Repeat with another object—and enjoy reliving different memories.



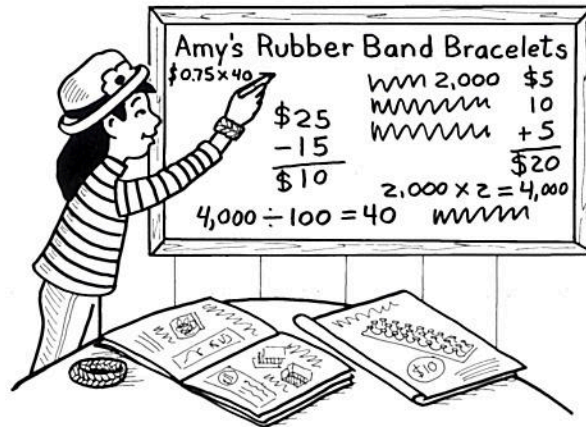


# A plan full of math

Encourage your budding entrepreneur to pretend she's launching a business. She'll do real math as she writes an imaginary business plan.

**1. Get started.** Let your child decide what kind of business she'd like and set a budget. Perhaps she'll invest \$25 to make and sell rubber-band bracelets.

**2. List supplies and costs.** Your youngster might look up prices in a craft store circular or online. If 2,000 rubber bands cost \$5, a loom costs \$10, and advertising supplies cost \$5, how many rubber bands could she buy? (4,000, since she'll have \$10 left after buying the other supplies, and she could buy two packs of rubber bands, with 2,000 bands each, for \$10.)



**3. Determine inventory.** Have her calculate how many bracelets she could make. If there are 100 bands in 1 bracelet, she'll make 40 bracelets (4,000 bands ÷ 100 = 40 bracelets).

**4. Set prices.** Encourage your child to pick a price that will let her make a profit. *Example:*

If she charges 75 cents per bracelet,  $\$0.75 \times 40 = \$30$ , for a \$5 profit. How much could she earn if she invests in another 2,000 rubber bands?

Who knows—your child might want to start a real business after all! What kind will she come up with?

## SCIENCE LAB Straw power

Can your child use drinking straws, tape, and string to support a cup full of pennies? Let him try his hand at engineering a solution.

**You'll need:** straws, tape, string, scissors, hole punch, plastic or paper cup, pennies

**Design:** Have your youngster tape straws together to create a structure and use



string to suspend an empty paper cup from it. He might arrange straws into a tent shape or a spider-like structure with eight straws for "legs."

**Test:** He should add one penny at a time to the cup and record how many it can hold before the structure collapses.

**Redesign:** Ask your child how he could design a structure that would support more pennies. Encourage him to focus on making weak spots stronger and then retest the structure.



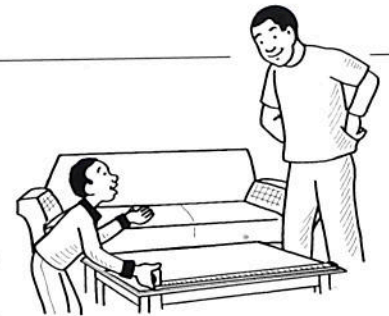
## Q & A

### Talking about math

**Q:** I've never felt comfortable with math. How should I talk to my son about what he's learning in math class?

**A:** Try to show enthusiasm for what your son is doing in math by talking to him about it. You might ask at dinner or homework time what he studied in math that day. Let him explain concepts he's working on, and then pose follow-up questions. For example, if he's learning to measure perimeter, you could have him show you how to figure the perimeter of the coffee table or a book.

When he finishes his homework, suggest that he go over a few problems. You might ask what method he used to solve a problem or how a certain math formula works. As he explains it to you, he'll reinforce his skills. And he'll feel proud to teach you something!



## MATH CORNER

### Calculator cross-over

This two-player calculator game sounds easy to win—but when your youngster tries it, she'll discover the strategy that's involved! She will build math skills as she tries to calculate an answer that's exactly 1 more or 1 less than her opponent's.

Each person needs a calculator. Player 1 enters 0, and player 2 enters 100. Now the first player adds any

1-digit number to 0 ( $0 + 6 = 6$ ) and the second player subtracts any 1-digit number from 100 ( $100 - 8 = 92$ ). Show each other your answers.

Continue adding and subtracting from your new totals. As your totals get close to each other's, choose numbers carefully—the player who passes her opponent's number by exactly 1 wins. Play again, but this time player 1 starts at 100 and subtracts, and player 2 starts at 0 and adds.



## OUR PURPOSE

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

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