

# Math+Science Connection

Beginning Edition

Building Excitement and Success for Young Children

December 2017

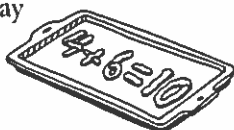
Wyoming County Schools  
A Family Involvement Newsletter



## TOOLS & TIDBITS

### Cookie sheet facts

With this idea, your youngster can form numbers, add, and subtract. Take turns creating play dough number sentences on a cookie sheet for each other to solve. You might make  $4 + 6 = \underline{\quad}$ , and he would form 10 for the answer. Then, he sculpts a problem for you.



### Move it, move it!

Can your child move like a cow or a snake? Let her try, then have her describe how animals use their body parts to move. She might say a cow walks on four legs and a snake slithers across the ground. Challenge her to move like other animals—only she might have trouble swinging from tree to tree without a tail like a monkey's!

### Web picks

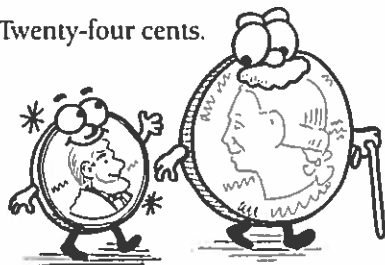
☐ Starring familiar characters like the Cat in the Hat, the activities at [pbskids.org/games/math](http://pbskids.org/games/math) will help your youngster work on counting, sorting, and more.

☐ Your child can make a spinning top, a rubber-band ball, and other homemade toys while exploring science at [sciencetoymaker.org](http://sciencetoymaker.org).

## Just for fun

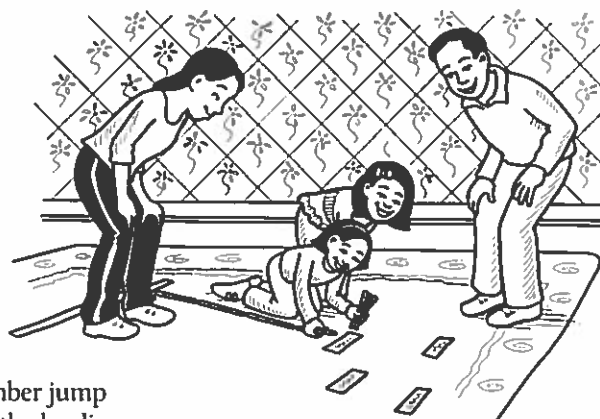
**Q:** What's the difference between a new penny and an old quarter?

**A:** Twenty-four cents.



## Measurement for the win

See which family member can jump the farthest, accurately predict the length of household items, or build the tallest block tower. Your child will practice measuring with these contests.



### Jump forward


Let your youngster mark a start line on the floor. Have each family member jump as far as possible, and mark the landing spots. Now, ask your child to choose a unit of measurement all the same size (straws, juice boxes) and line them up to measure each jump. She can announce the winner. ("Susie's jump was 7 juice boxes long!")

### Compare lengths

Take turns choosing two objects and predicting which is longer. Then, your child can measure one item with yarn, cut it to fit, and compare it with the second object. After each family member has

measured six pairs of items, the person with the most correct predictions wins.

### Stack blocks


Who can make the tallest block tower? The trick is to stop before yours topples over—and request that your youngster measure it. Help your child put the 0 end of a yardstick or measuring tape on the floor or table beside each tower to measure its height in inches and then in centimeters. This will help her become comfortable with both units of measurement. 

## Reversible—or not?

Some foods change from liquid to solid (or vice versa) when they're heated or cooled. Which foods change, and which changes can be reversed? Let your youngster observe to find out.

First, help him crack a raw egg into a bowl, and have him draw what he sees. Then, place the egg in a pan over medium heat until set, and ask him to draw the cooked egg. Next, he should observe and draw what butter looks like before and after you heat it.

Now let your youngster put the egg and butter into the refrigerator for an hour and observe again. What does he notice? (The cooled butter becomes solid again, but the egg doesn't go back to being liquid.)

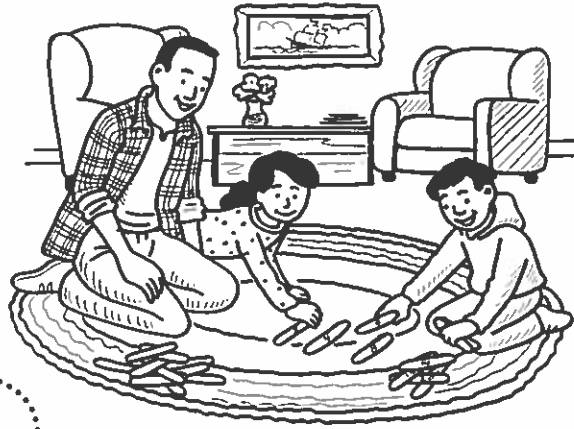
Encourage him to observe heating and cooling other foods to see which ones change—and change back. 



# Skip that

“Two, four, six, eight, what do we appreciate?” Skip counting! This activity is great for building skills that help with number sense, math fluency, and even early multiplication.

**Number.** Have your youngster make a set of skip counting sticks by numbering 10 craft sticks by 2s from 2 to



20. He can line up the sticks as he skip counts in order.

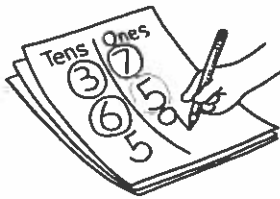
**Arrange.** Next, mix up the sticks, and scatter them on a table. Can your child put the numbers back in order? *Idea:* Make two sets, and race each other to do it.

**Count on.** Scatter the sticks again, and have your youngster pick one at random. Ask him to start at that number and skip count to 20. If he drew 12, he would say, “12, 14, 16, 18, 20.”

## MATH CORNER Name the digits

How many tens? How many ones? Play this guessing game to practice place value together.

First, ask your child to divide a sheet of paper into two columns labeled “Tens” and “Ones.” Now, secretly think of a two-digit number for your child to guess, such as 54. She writes a random guess on the sheet. If she guesses 37, she would put the 3 in the tens column and the 7 in the ones column.



Use this code to “score” her guess, and she’ll use your answers to make her next guess:

- Draw a red circle around any digit that is not in your number. For 37, you’d circle both digits in red.
- Draw a yellow circle around a digit that is correct but in the wrong column. If she guesses 65, circle 5 in yellow (and 6 in red).
- Draw a green circle around any digit that is correct *and* in the correct place. Say she guesses 59—circle 5 in green (and 9 in red).

Have your youngster continue guessing until she gets your number. Next, she can choose one for you to guess. *W*



*Variation:* Let him make skip counting sticks for 5s and 10s, and play again. *W*

## SCIENCE LAB Blizzard in a jar

Your child can create the magic of a snow globe with this experiment that demonstrates principles of chemistry.

**You’ll need:** a clean jar (baby food jar, canning jar), rubbing alcohol, decorations (glitter, sequins), vegetable oil

**Here’s how:** Fill the jar about  $\frac{1}{4}$  full with rubbing alcohol. Let your youngster drop in the glitter and sequins. Then, have him pour in vegetable oil to the top and close the jar tightly. He can turn the jar upside down and gently shake it back and forth, then turn it right side up.

**What happens?** He will see “snow” falling.

**Why?** When he shakes the jar, the oil breaks up into tiny drops and the decorations move around. Because the oil is denser than the alcohol, the drops sink to the bottom along with the decorations—creating the “snowy” effect. *W*



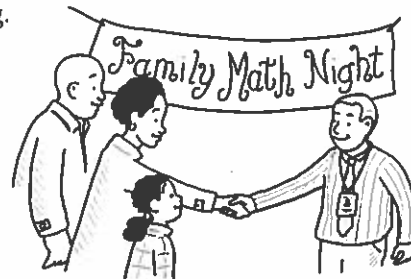
## Q & A Parent involvement in math

**Q:** I’ve read that it’s important to be involved in my child’s education. How can I play a role in what she’s doing in math?

**A:** The best—and easiest—way to be involved is to express interest in what your youngster is learning. Ask her to show you her math papers and explain her work. Let her be the “teacher.” She’ll enjoy sharing her knowledge, and going over the steps will boost her learning.

Also, support math activities at school. Attend functions like family math nights, and volunteer in math class if you can.

Finally, bring math into everyday life with your youngster. You might point out how many stamps you need for your mail or how many slices of bread it takes to make lunch. Let her know that you use math all the time—and that you love numbers! *W*



### OUR PURPOSE

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

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# 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

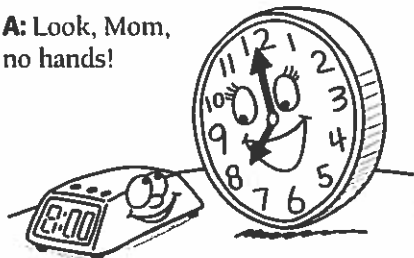
Your child can play math games involving counting, geometry, fractions, graphing, and more at [math.rice.edu/~lanius/Lessons/](http://math.rice.edu/~lanius/Lessons/). Some games are available in Spanish, too.

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.

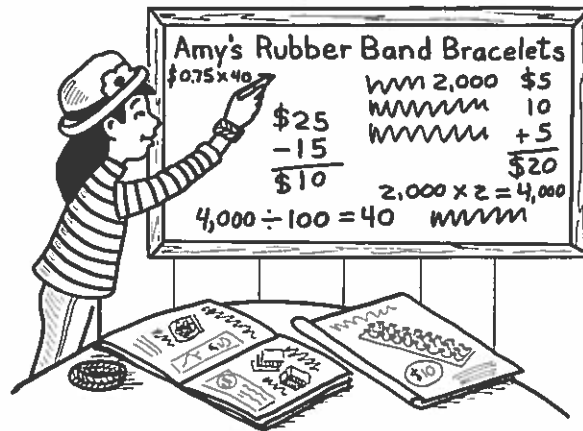


# A plan full of math

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.)



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?

**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 ( $4,000 \text{ bands} \div 100 = 40 \text{ bracelets}$ ).

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

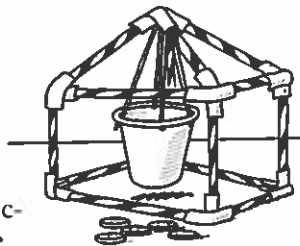
Who knows—your child might want to start a real business after all! What kind will she come up with?

## 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.

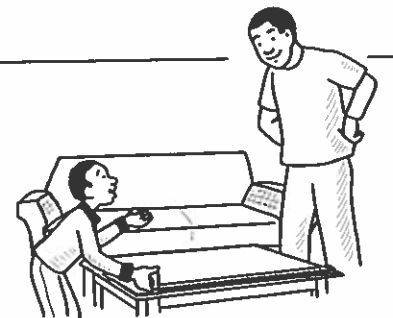
## Q & A

### 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.



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