

# Math+Science Connection

Beginning Edition

Building excitement and success for young children

January 2009

Dekalb County School District



## TOOLS & TIDBITS

### Measure your name

How long is your child's name? Ask her to write her name on paper, measure it with yarn, and glue the yarn in a straight line underneath. Then, help her line the yarn up with the "0" on a ruler and measure the length.



### Magnetic money

Demonstrate how dollar bills work in vending machines. Have your youngster hold a dollar at the top edge and move a magnet slowly down. He'll find a spot where the bill moves toward the magnet. That's because magnetic ink is used in printing money—so vending machines use magnets to attract bills.

### Book picks

Will the giant panda and her little cub find a new home with enough bamboo to eat? Read *Tracks of a Panda* (Nick Dowson) to teach your child about the challenges pandas face.



*Hat Tricks Count* shows young sports fans that numbers are all around the rink. Enjoy clever counting rhymes and learn interesting hockey facts in this book from Matt Napier.

### Worth quoting

"The essence of mathematics is not to make simple things complicated, but to make complicated things simple." S. Gudder

## Just for fun

**Q:** How many feet are in a yard?

**A:** It depends on how many people are standing on it!



## Early algebra

Algebra is not just for big kids! With simple activities like these, your youngster will develop important skills that will help her succeed in advanced math later.

### Mystery number

Play a mystery number game. *Example:* "My name is  $x$ . I'm less than 14. I'm an odd number. I'm more than  $7 + 4$ . Who am I?" (13) To figure out  $x$ , have her write the numbers 1–20 and cross them off based on your clues.

### Story problems

Tell a number story with a question for your child to solve. *Example:* "We had 2 apples. I bought some more apples today. Now we have 5. How many apples did I buy?" ( $2 + x = 5$ ;  $x = 3$ ) Using items she knows (food, clothes) will allow her to picture the problem in her head.

### Secret equation

Make up a silly number sentence with her favorite animal or toy representing a



secret number. For instance, you could say, " $4 + \text{leopard} = 9$ . What is *leopard*?" Help her figure out the answer with tally marks:  $//// + \text{leopard} = \#\#\#\#\#\#$ . By matching the marks up, she'll see that  $\text{leopard} = 5$ .

### Math in a house

Write an algebra problem. Draw a "house" in place of one number, and ask your youngster to find the number that belongs in the house ( $5 + \hat{\phantom{0}} = 8$ ). When she comes up with the answer (3), let her write it in the box.

*Tip:* After your child solves a problem, let her make up one for you to do. 🦋

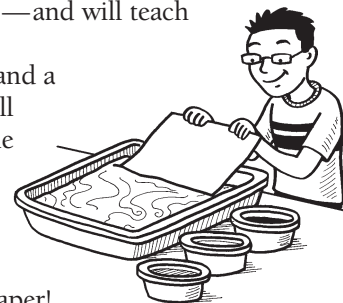
## Make marbled paper

Part science and part art, this project is all fun—and will teach your child an environmental lesson, too.

Have him blend a tablespoon of vegetable oil and a few drops of food coloring in three containers. Fill a shallow pan with water, and have him spoon the mixtures into different spots. The colors will quickly spread out.

Then, let your youngster put white construction paper on the water for 30 seconds and lift it off. When it dries, he'll have beautiful marbled paper!

You can explain that oil weighs less than water, so it stays on top and spreads quickly—which is why oil spills are so damaging to the environment. 🦋



# Kitchen chemistry

Your kitchen is the perfect laboratory for learning about chemistry. Here are two activities that will show your child the wonders of chemical reactions.

## 1. Make an eggshell disappear


Have him put an egg into a small container and pour in white vinegar to cover it. Refrigerate for 24 hours. Then, pour out the vinegar and let him cover the egg with fresh vinegar. Refrigerate for another 24 hours.



Carefully remove the egg and rinse it in cold water. The shell will be gone! Why? Vinegar contains an acid that dissolves the calcium in the eggshell.

## 2. Blow up a balloon

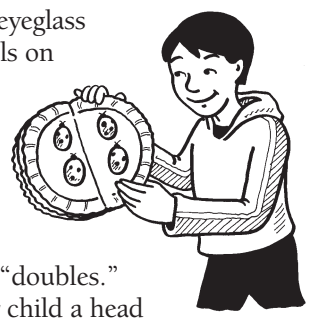
Together, add 1 package active dry yeast and 2 tablespoons sugar to 1 cup very warm water. When the yeast and sugar have dissolved, pour the mixture into a small, empty water bottle. Then, stretch out a large balloon by blowing it up a few times, and let your youngster put it over the mouth of the bottle.

After a few minutes, the balloon will inflate on its own! Why? The chemical reaction of the yeast and the sugar produces a gas (carbon dioxide) that slowly fills the balloon. 




## MATH CORNER Double the fun

What do eyeglass lenses, wheels on a car, and legs on a centipede have in common? They're all examples of "doubles."



Give your child a head start on multiplication by practicing doubles facts. Before long he'll realize that multiplying a number by 2 is the same as doubling it.

● Have him look for examples in the real world, such as seats on a seesaw ( $1 + 1 = 2$ ), fingers on his hands ( $5 + 5 = 10$ ), or crayons in 2 boxes ( $8 + 8 = 16$ ).

● Let him make a doubles booklet by stacking three paper plates and folding them in half. He can draw sets of doubles on facing pages (example: 2 ladybugs on each side). Help him count the total number of ladybugs and write the math fact:  $2 + 2 = 4$ . 

## PARENT TO PARENT My own science journal

My daughter Megan loves science. She likes to watch bugs and collect leaves, and she's always asking how things work. So when my older son said he had to keep a science journal for fifth grade, I thought that would be a great idea for Megan, too.

I got her a small spiral notebook and told her she could use it to "observe" the world. Sometimes I give her objects to explore. For example, one time I cut a tomato in half, and she drew a picture and wrote words like "red," "seeds," and "juicy." Other days I encourage her to look out the window and record what she sees. Or we go outside, and she'll sketch a pretty rock.

Megan loves using her science notebook. And I'm hoping she will always love exploring the world around her! 



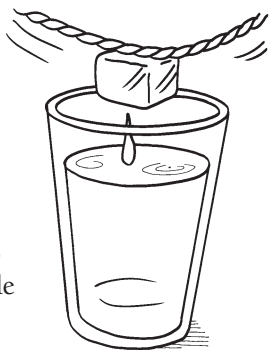
## SCIENCE LAB Melting ice

Show your youngster why we sprinkle salt on icy sidewalks in the winter.


You'll need: glass, water, ice cube, 12-inch piece of string, salt

Here's how: Have your child fill a glass with water and drop in an ice cube. Ask her to lay the string across the ice and try to use it to pick up the ice. Then, have her sprinkle a little salt on the ice cube, count to 10, and try again.

What happens? After adding salt, she'll be able to pick up the ice cube with the string.



Why? Salt lowers the freezing point of water. In this case, it melts the ice just enough to allow the string to stick to it, and then the water refreezes around the string.

Next time it's icy outside, let your youngster help put salt down. She'll see the ice melt into slush that is safer to walk on. 

**OUR PURPOSE**

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

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