

# Math+Science Connection

Beginning Edition

Building Excitement and Success for Young Children

March 2019

Title I

Prince William County Public Schools



## TOOLS & TIDBITS

### Number “cake walk”

Play this game to help your youngster show numbers in different ways. Have him number paper plates 1–10 and put them randomly in a circle on the floor. Turn on music while he and his friends walk around the circle. Now stop the music—players freeze and hold up fingers to equal the number they’re closest to. For 6, your child might show 3 fingers on each hand.

### Animal field trip

Your child can learn about animals by visiting a farm or zoo, where many babies are born in spring. Encourage her to ask workers questions about the animals.



Together, observe mothers caring for their young, listen for animal sounds, and talk about what they’re eating.

### Book picks

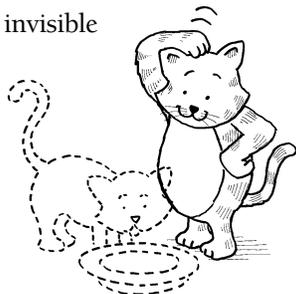
▣ The little inchworm in *Inch by Inch* (Leo Lionni) measures everything in his path, from a flamingo’s neck to a heron’s leg. But how could he measure a hummingbird’s song?

▣ Your youngster will discover the science behind the projects in *Crafty Science* (Jane Bull). Includes more than 20 ideas, from a “swirling snowstorm” to a “meringue mountain.”

## Just for fun

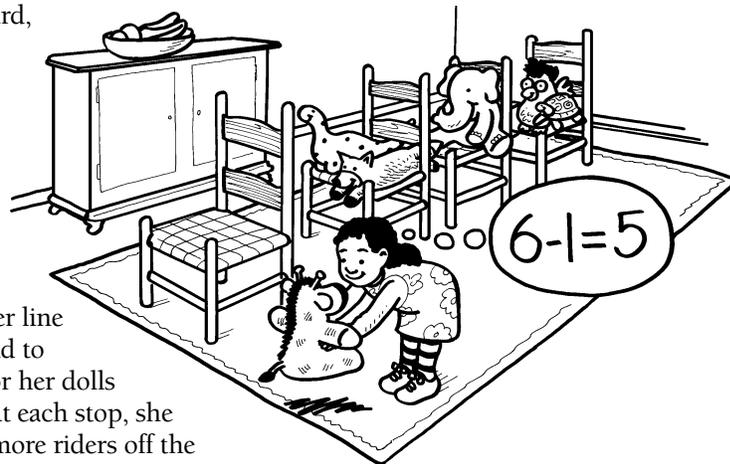
**Q:** What do invisible cats drink?

**A:** Evaporated milk!



## Subtraction strategies

Counting backward, finding the difference, and doing “take-away” are all ways your child can solve subtraction problems. Try these hands-on activities.



### Empty the bus

Let your youngster line up chairs and pretend to drive a school bus for her dolls or stuffed animals. At each stop, she should help one or more riders off the bus and count backward from the total. *Example:* If she starts out with 6 passengers and unloads 1 at the first stop, she would say, “6, 5...there are 5 passengers left.  $6 - 1 = 5$ .”

### Pair ‘em up

Making pairs is an easy way to find the difference. Each of you should choose a color of play dough, then toss a die and create that number of play dough “marbles.” Now your child can pair each of her marbles with one of yours. Say she made 5 and you made 2—the number of unpaired marbles (3) is the difference

(because  $5 - 2 = 3$ ), and she earns 3 points. The first player to get 20 points wins.

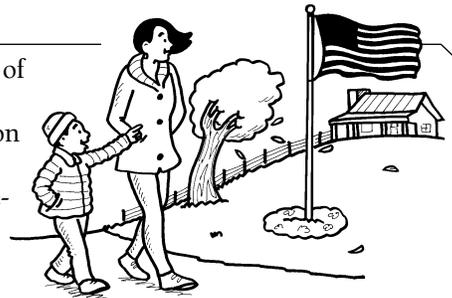
### Take-away sticks

Line up 20 craft sticks, and stack a deck of cards facedown (face cards removed, ace = 1). On each turn, a player flips over a card (7), takes that number of sticks, and says how many sticks are left ( $20 - 7 = 13$ ). She keeps the sticks, and it’s the next person’s turn. To win, get the last stick by exact count ( $3 - 3 = 0$ ). *Note:* If you draw a card and can’t remove that many sticks, your turn ends. ♣

## Blowing in the wind

Your youngster will discover the power of wind with this demonstration.

Let him select a few small objects (cotton ball, ribbon, button, rock) and place them at one end of a cookie sheet. Have him predict which items will be easiest to move to the opposite end by blowing through a straw. Now he can test his prediction.



What does your child notice? Lighter objects (cotton ball, ribbon) are easier to blow, while heavier ones (button, rock) take more effort. They need a stronger “breeze” to push them and make them move.

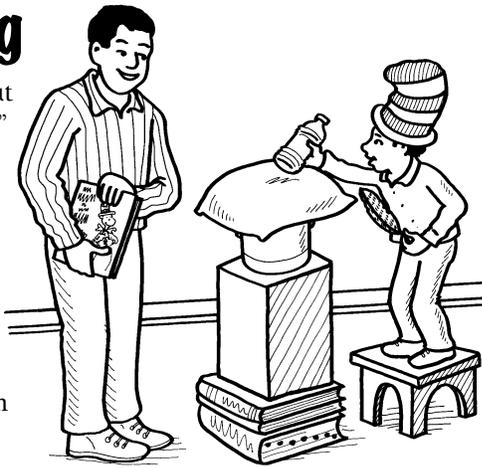
Then, go for a walk on a windy day. Your youngster can observe which objects blow (flag, leaves) and which ones are too heavy for the wind to push (house, car). ♣

# Dr. Seuss engineering

“Thing 1” for your youngster to know about engineering is that anyone can do it. “Thing 2” is that it’s fun! Here are engineering challenges inspired by Dr. Seuss, whose 115th birthday is celebrated on March 2.

**Read:** *The Cat in the Hat*

**Try:** How many objects can your child stack before his tower topples over? He’ll find out with this Cat in the Hat-style engineering feat (no fishbowl or cake allowed!). Encourage him to consider the size, shape, and weight of each item, then decide where each should go. For



example, he’ll probably want bigger, heavier objects (dictionary, cooking pot) toward the bottom and smaller, lighter ones (pillow, empty water bottle) near the top.

**Read:** *One Fish, Two Fish, Red Fish, Blue Fish*

**Try:** Challenge your youngster to engineer a fishing rod that will hook paper fish. He might suspend a string from a pencil and attach a magnet. Now let him cut out fish shapes from construction paper and slide a paper clip on each one. Can

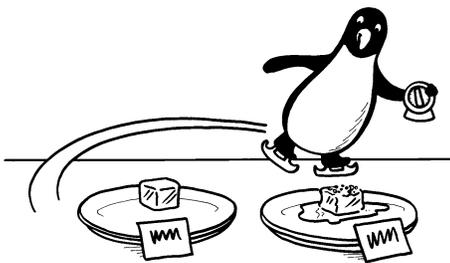
he catch one fish? How about two? Suggest that he redesign his rod to hook even more fish at a time. 🦋

## SCIENCE LAB

### Ice cube race

In this cool experiment, you and your youngster can “race” to melt ice cubes.

**You’ll need:** two ice cubes, two plates, measuring spoon, salt, timer



**Here’s how:** Each of you should put an ice cube on a plate. Have your child measure  $\frac{1}{4}$  tsp. salt on her cube, and leave your cube alone. She can set a timer and check the cubes every five minutes, until they begin to melt.

**What happens?** Her cube wins! The ice cube with salt melts the fastest.

**Why?** Ice melts when it gets above freezing (32 degrees). But salt has special properties that help ice melt faster. That’s why we put salt on icy sidewalks and roads—even when it’s below freezing, the ice or snow will begin to melt. 🦋

## MATH CORNER

### Coin value bingo

Empty the piggy bank and play this game that helps your child identify coins and their values.

**Set up:** Each player makes a big 5 x 5 bingo card and puts his choice of any 1, 2, or 3 coins (pennies, nickels, dimes) onto each square. On separate slips of paper, write the following numbers: 1, 2, 3, 5, 6, 7, 10, 11, 12, 15, 16, 20, 21, 25, and 30. Put the slips in a bowl.

**Play:** Let your youngster draw a slip and call out the number. Players clear any one square on their board whose coins total that value. *Example:* If the number is 15, your child could clear a space with 3 nickels ( $5 + 5 + 5 = 15$ ) or with 1 dime and 1 nickel ( $10 + 5 = 15$ ).

**Win:** The first player to clear 5 spaces in a row—horizontally, vertically, or diagonally—wins and calls the numbers for the next round. 🦋



## Q & A

### Be upbeat about math

**Q:** *I’ve never felt very confident about math, but I know I’m supposed to be positive about it for my daughter. What should I do and say?*

**A:** You’re right. When parents have a good attitude toward math, children are more likely to see it as something they can do—and to learn more.

Throughout the day, notice ways you use math, and mention examples to your youngster. You might show her coupons you’ve clipped and say, “I love how math helps me save money.” And be sure to ask her,

“How did math help you today?” Maybe she used measuring cups in the sand and water table at school, for instance.

Also, if you’re not sure about a math concept, such as kilometers vs. miles, admit that to your child. Then, look it up together, and talk through a problem as you solve it.

You may discover that you can do math confidently after all—and you’ll help your daughter develop a love of math. 🦋



## OUR PURPOSE

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

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