Beginning Edition

Math+Science Connection

Building Excitement and Success for Young Children

December 2015

Pine Street Elementary School

TOOLS & TIDBITS

One to one

Use everyday stair climbing to help your child understand that each number he counts relates to one object. As he walks up stairs, have him count one number per step. Then, when he walks back down, he can count backward. He'll practice one-to-one correspondence (one number for each step), as well as counting forward and backward.

A rainbow of animals

Animals come in every shade. Let your youngster draw a rainbow on a sheet of paper. Then, she could cut out animal pictures from old magazines and glue them on the matching color. Ask why she thinks animals are different colors. One reason is for protection—green frogs, for example, blend into pond grass to hide from predators. What other examples can she think of?

Web picks

Go fishing, bowling, and kayaking—all while practicing math skills—at *toytheater.com/math.php.*

At *nps.gov/webrangers,* your child can become a web ranger and explore nature. He'll discover tidepools, "visit" parks, and even hike a virtual trail.

Just for fun

Q: What did the vacuum say to the broom?

A: I wish everyone would stop pushing us around.

Double or nothing

When it comes to math facts, seeing double is a good thing! Watch your youngster learn the doubles facts and use doubles as a strategy for adding numbers with these ideas.

Create dominoes

Have your child cut out 12 rectangles and draw a line down the center of each. Make dots (1–12) on one side of each "domino." Now ask her to create "double dominoes" by drawing the same number of dots on the other side. Can she write the doubles addition fact on the back? (4 + 4 = 8 for doubles 4) *Tip:* She could use her dominoes to practice the doubles facts.

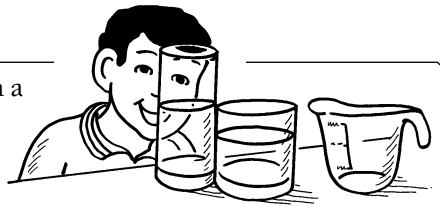
Sketch and rhyme

To help your youngster remember doubles up to 12 + 12, suggest that she sketch a picture for each one. For instance, she might draw 1 eye + 1 eye = 2 eyes or 3 ladybug legs + 3 ladybug legs = 6 ladybug legs. Encourage her to make up a rhyme for each. "Five toes plus five toes equals ten on the nose." Maybe she'll even combine them all into a rap song.

Find the next-door neighbor

Once your child knows the doubles facts, she can learn their "neighbors." *Example:* 9 + 10 = 9 + (9 + 1) = 19. Have her draw a row of 10 houses and number them with odd numbers, 3–21. Write "doubles + 1" problems on index cards (1 + 2, 2 + 1…10 + 11, 11 + 10). Turn over a card. The first person to put a token on the answer "moves into" that house. Keep playing until all the houses are taken.

Properties of water



Give your thirsty child a choice between a tall, thin glass or a short, wide one with the same amount of water, and he's likely to think the tall one has more water. Now show him why the shape doesn't matter.

Let your youngster fill a measuring cup with 1 cup water. Then, he should pour the water into containers of different shapes and sizes, one by one. Ask him to describe how the water looks each time (shallow, deep, square, round). And each time, have him pour the water into the measuring cup to check the amount—yep, still 1 cup!

He'll learn that water, like other liquids, takes on the shape of the container it's in. But while it changes shape, its volume remains the same.

Make a "pattern lizard"

Making patterns helps your child problem solve, make predictions about what comes next, and get ready for algebra. Let him enjoy patterns with this fun project.

Create. Together, cut different-colored construction paper into strips and tape each one into a loop. Start a pattern with the loops (*example:* blue, blue, green, blue, blue, green), and ask your youngster to continue it to make a long lizard. Have him tape the loops together, string yarn through, and glue googly eyes and a red paper tongue to the front.

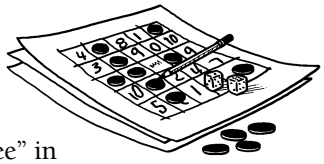
Read. Suggest your child "read" his pattern aloud, pointing to each loop as he goes. Saying the colors will help him hear the rhythm of the patterns.

Ask. Get him thinking about how patterns work by asking questions about his lizard. Point to the end and ask what three colors would come next. Or ask, "What happens over and over in this pattern?" (Green comes after blue.)

Idea: Together, make a *lounge* (a group) of lizards, and have him compare their patterns and lengths. You might even have lizard races with them!

MATH CORNER Addition-subtraction bingo

Add and subtract—and be the first with five in a row in this twist on bingo.



1. Each player should make a 5 x 5 grid on a sheet of paper. Put "free" in the middle space. Randomly write the numbers 0–10 in the remaining squares.

2. Take turns rolling two dice. Everyone looks at the numbers rolled and silently adds them together or subtracts one from the other. For instance, roll 4 and 1, and add 4 + 1 = 5 or subtract 4 – 1 = 3. *Note:* Players can use objects or scratch paper to do the math.

3. If you have the number (5 or 3), mark it with a bingo chip. You can mark only one number each round.

4. Play until someone fills 5 spaces in a row (diagonally, horizontally, or vertically) and yells, "Bingo!"

OUR PURPOSE

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

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SCIENCE LAB Balancing act

Your youngster might enjoy walking on balance beams or balancing on one leg while dancing. Help her learn about the science of balancing—and the center of gravity—with this sculpture toy.

You'll need: a cork or piece of dry sponge ("body"), 2 pipe cleaners or pencils ("arms"), 2 marshmallows or balls of clay ("hands")

Here's how: Have your child stick the arms into the body, angling them down, and attach a hand to each arm. Can she balance the sculpture on her fingertip? Let her try balancing it on other surfaces, too—a desk, a book, or even the top of her head! (*Note:* If it won't balance, she should bend the arms down more or add weight to the hands.)

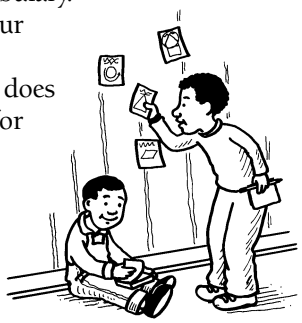
Why? More than half the weight is below the resting point, lowering the toy's center of gravity. The lower the center of gravity, the easier it is to balance. *Idea:* Have her try bending the arms at different angles to see which ways balance best.

Guess what? This is why racing cars are so low to the ground—there's less chance they'll tip over even when they're going fast.

PARENT TO PARENT A wall full of math words

At our parent-teacher conference, Ms. Berger said our son Matt could use some practice with math vocabulary. She gave us a few ideas, and our favorite is the word wall.

While we read books or he does math homework, Matt looks for words to put on his bedroom wall. He writes the word on a large sticky note and draws a picture to remind him of the meaning. For instance, he drew a ruler with hash marks for *centimeter.* For *above*, he sketched a two-level school and circled the top floor.



Then, we use his word wall to play games. In one, we secretly pick a word and give clues to help the other person guess it. Our math word games have become part of our bedtime ritual, and Matt's word wall—and his math vocabulary—are growing!