

Math+Science Connection

Beginning Edition

Building excitement and success for young children

February 2011

Prospect Point Elementary School

TOOLS & TIDBITS



Minus one

Play this game to practice subtraction. Each player numbers a sheet of paper 1–11. Take turns rolling two dice. Add the numbers together, and cross off the number that is one less than you've rolled. The first person to cross off every number wins. (If you roll a number you've already crossed off, it's the next player's turn.) *Variation:* Play "minus two" (number the sheet 0–10).

I see it!

Boost your child's observation and questioning skills with this twist on I Spy. Make collages with photos cut from old magazines. Then, give her clues to something in your collage. ("I spy something brown." "I spy something with a bushy tail.") When she guesses right (a squirrel), it's her turn to give you clues for her collage.

Web picks

Children can work on a wide variety of math skills with games and flash-card activities at www.mathslice.com. Some games can be played in Spanish or downloaded to mobile devices.

Your child can meet the animals of the San Diego Zoo, watch videos, and play games at www.sandiegozoo.org/kids. Also offers ideas for zoo crafts and science experiments.

Worth quoting

"It is today that we create the world of the future." *Eleanor Roosevelt*

Just for fun

Q: What does a tiger cub become after it's three days old?

A: Four days old.



Calendar math

What's today's date? Check the calendar. When is your dentist appointment? Check the calendar. Practice math... check the calendar?


It's true: Your family's calendar is a ready-made math center for your child. Here are ideas for using it to build math skills.

Read the calendar. Each morning, let your youngster point to the date and read it aloud: "Today is Wednesday, February 16th, 2011." Have him announce yesterday's and tomorrow's dates, too. ("Yesterday was Tuesday, February 15th, 2011." "Tomorrow will be Thursday, February 17th, 2011.") He'll learn about the order of days and the passage of time.

Ask questions. See if your child can tell you how many days are left in the month (he can count to find out). Or have him see how many Sundays or Tuesdays there are. Also, pose questions like "What date is two weeks from today?"




or "Grandpa's birthday is on the second Monday of the month. What date is his birthday?"

Make your own. Help your youngster make a calendar for next month by drawing a grid and writing the days of the week across the top. Have him look at the current month to figure out what day next month will begin on. Then, he can write the correct date on each square. Suggest that he create a pattern with symbols for that month (*example:* for March he might alternate kite, lion, lamb—one per calendar box). 

Shoe design

What do your family's shoes have to do with engineering? With this activity, your youngster will find out.

Let her gather a variety of shoes from your closets (sneakers, boots, sandals, flip-flops, soccer cleats, slippers, high heels). Then, have her draw a picture of each shoe and what it's used for. For instance, she might draw boots on someone playing in the snow or flip-flops in a beach scene.

Finally, help your child think about how engineers designed each shoe for specific activities. She can examine the shoe's bottom and top and feel its material. Ask questions, such as "Why does a boot cover your leg?" or "Why do slippers have bumps on the bottom?" She'll begin to understand the relationship between a shoe's design and its purpose. 




Egg-citing experiments

Reach into the refrigerator, and pull out a science experiment! With a few eggs, your youngster can learn important lessons about states of matter.

● Gather three raw eggs, and let your child crack the first one into a bowl. Ask her to describe the yolk (yellow, runny) and the white (clear, thick). Next, boil water in a pot, and add the two other eggs. Remove one in 4 minutes and the other in 12 minutes. Have her predict what each one will look like inside, and crack them open so she can see (one will be soft-boiled and the other



hard-boiled egg (it will stop). The raw egg keeps moving because of *inertia*—the liquid inside continues to move. But in the hard-boiled egg, the solid yolk and white are not moving on their own, so the egg can react to her touch more quickly.

Note: Be sure your child washes her hands after handling raw eggs. 


hard-boiled). Explain that heat changed each egg's "state"—from liquid to semi-solid or solid—and it will never change back.

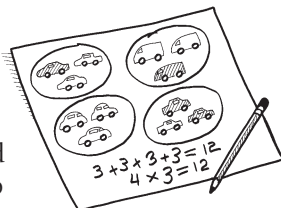
● Can your youngster tell a hard-boiled egg from a raw egg without cracking them open? She'll find out how with this activity. Let her spin a raw egg and touch it gently (it will continue to spin) and then try the same thing with a

MATH CORNER Grouping objects

Help your youngster get ready for multiplication with this two-step activity:

1. Have him separate toy cars (or other small objects) into equal piles. He might make 4 groups of 3 cars, for example. Ask him how many cars there are—he will probably count them and announce, "12." Then, talk about other ways he could find the sum. He might skip count by 3s (3, 6, 9, 12). Or you could ask, "How many groups of 3 cars do you see?" When he answers, "4 groups," you can say, "Yes. 4 groups of 3 = 12."

2. Next, let him draw a picture of his math problem. He can draw 12 cars and circle each group of 3. Underneath, help him write the addition number sentence ($3 + 3 + 3 + 3 = 12$) and the multiplication sentence ($4 \times 3 = 12$). Let him practice saying the equations aloud. He'll see that grouping makes the math problem easier! 




PARENT TO PARENT

Backward numbers?

I was worried because my five-year-old son Brandon kept reversing some numbers when he wrote them. So I called his teacher to see if she was concerned. Mrs. Collins assured me that this was normal for his age, but she gave me a few ideas that she said could help.

First, she suggested that when I notice a backward number, I ask Brandon if it "looks right." That causes him to stop and examine the number, and usually he realizes that it's reversed. Then, I encourage him to calmly erase it and rewrite it the right way.

Mrs. Collins also recommended that I help Brandon carefully write the numbers 0–10 on a poster board and hang it up. Now he uses his poster for reference when he's doing homework or keeping score in games. I'm hoping that soon he'll write his numbers the right way every time. 



SCIENCE LAB Hall of mirrors


Give your child an early lesson in the science of *optics* as she makes a simple kaleidoscope and sees light reflected in beautiful ways.

You'll need: 3 small mirrors (from makeup compacts or a dollar store), duct tape, wax paper, pencil, scissors, strips of different-colored construction paper and tissue paper, small objects (buttons, game pieces)

Here's how: Help your child stand the mirrors up into a triangular prism, with the mirror sides facing in. Tape them together. Let her place it on wax

paper, trace around the bottom, and cut out the shape. Tape it to the bottom of the mirrors. Then, she can drop the paper strips and objects inside. Her "kaleidoscope" is ready! Have her shake it, look at the mirrors, and repeat.

What happens? With each shake, your youngster will see symmetrical patterns of shapes and colors in the mirrors.

Why? The light entering from above reflects off the mirrors, and the triangular shape makes any arrangement of objects show up in a symmetrical pattern. 



OUR PURPOSE

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

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