

Math+Science Connection

Intermediate Edition

Building Understanding and Excitement for Children

December 2013

Title I / Learning Assistance Programs
Stanwood-Camano School District

INFO BITS



Math words

Practice math vocabulary with this quick word game. Ask your youngster to say a math word (polygon). Then, the next person says a math term that begins with the last letter (**n**umera**l**). Each person continues the chain (**l**inear, **r**adius, **s**phere). If someone can't think of a word, she's out. When one person is left, start over.

Inherited trait

Here's an interesting fact to share with your youngster: Just like eye or hair color, the ability to curl your tongue is an inherited trait. Suggest that your child survey relatives and tally how many can or can't curl their tongues. He might even have friends do their own surveys to see whose family has the most people with the tongue-curling trait.

Web picks

Figurethis.org is full of math challenges about kid-friendly topics, such as football scores, birthdays, and television ratings. Also available in Spanish.

How does energy cause a hot air balloon to lift off the ground? Your child will find out when he plays the "energy flow" game at sciencemuseum.org.uk/onlinestuff/games/energy_flows.aspx.

Just for fun

Q: What do invisible cats drink?

A: Evaporated milk!



Fractions are numbers, too

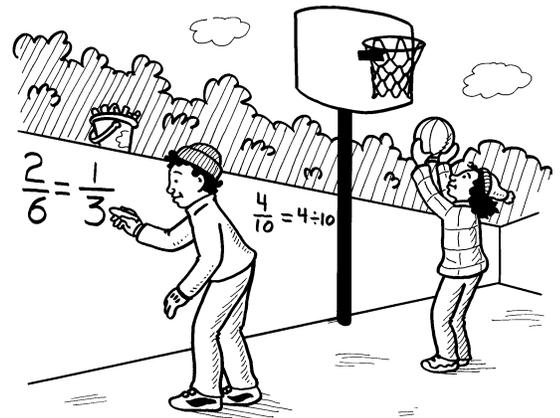
Fractions seem to stump many students—but they don't have to. Here are ways to help your child see fractions in action and learn there is nothing to fear!

Number line

With clothespins and a hanger, your youngster can create a fraction number line. Have him label one clothespin with 0, another with 1, and 5–10 others with a fraction between 0 and 1 ($\frac{1}{8}$, $\frac{1}{4}$, $\frac{1}{3}$, $\frac{4}{6}$). Mix up the clothespins, and ask him to put them in their approximate places on the hanger ($\frac{1}{4}$ should be about $\frac{1}{4}$ of the way from 0 to 1).

Keep score

Play basketball, and practice figuring out fractions. First, take 6 shots each. If your child sinks 2, he announces his score as $\frac{2}{6}$ (or $\frac{1}{3}$). Next round, try 8 shots so the *denominator* (the bottom number) changes. Who scored the largest fraction? *Idea:* Go for 10 shots, and this time turn the fractions into decimals by dividing the denominator into the *numerator*, or top number ($\frac{4}{10} = 4 \div 10$, or 0.4).



Play cards

Deal a deck of cards facedown (face cards removed, ace = 1), and have each person draw a horizontal line on a sheet of paper. Then, players should each turn over two cards and make a fraction by putting one card above the line and one below. Create the largest fraction, and you get to take all the cards (improper fractions, where the numerator is bigger than the denominator, are okay). In a tie, put the cards aside. Whoever has the most cards at the end wins. *Variation:* Play for the smallest fraction.

"Earth" egg

How is a hard-boiled egg like the earth? With this activity, your youngster will use an egg to simulate the earth's layers and *plate tectonics*.

Have your child gently roll a hard-boiled egg between her hands so the shell (the earth's *crust*) cracks. Encourage her to shift the pieces of shell—the *plates*—around. What does she notice? The shell buckles and pushes up pieces of the next layer (the egg white, or the earth's *mantle*). When plates shift on earth, earthquakes might occur, or mountains or new ocean floor may form.

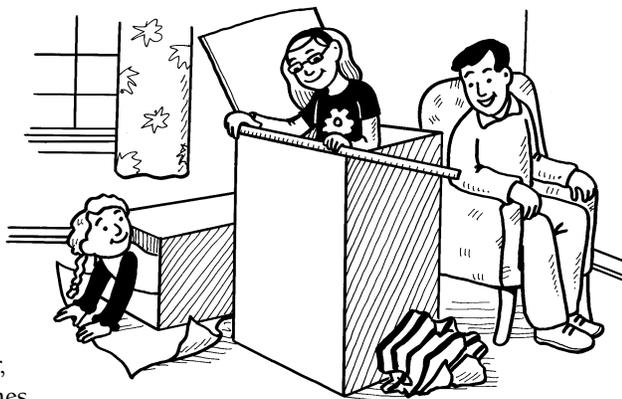
Finally, she could cut the egg open lengthwise to expose the "earth's" layers. The shell is the crust, the white is the mantle, and the yolk is the *core*.



Lesson in a box

As your youngster gets excited about the holidays, let her use gift boxes for math and science lessons. Try these ideas.

Choose wrapping paper. Have her help wrap gifts—she'll learn which papers block light. Put out different types of wrapping paper, such as tissue paper, cellophane, thin light-colored paper, and heavier patterned paper. Ask which ones will keep the gifts a secret. Then, let her wrap a few to find out. *Note:* Explain that *opaque* paper blocks light, *translucent* allows some light through, and *transparent* lets all the light through.



Measure the box. When gifts are wrapped, the guessing games often begin about what's inside. Suggest that your child get clues by measuring the boxes.

First, she could find the perimeter of the base, or the total distance around, by measuring each side of the base and adding the numbers together. For instance, if the base is 14" x

16", its perimeter would be 60" (14 + 14 + 16 + 16). Next, have her find the box's volume, or the amount of space inside, by multiplying length times width times height. *Example:* A 6" x 8" x 3" box has a volume of 144 cubic inches (6 x 8 x 3 = 144). Now...what does she think those boxes could hold? 



SCIENCE LAB

Make your own frost

Whether or not you live in a chilly climate, your child can see frost this winter.

You'll need: empty can (soup, vegetable, coffee), crushed ice, salt, spoon

Here's how:

Have your youngster fill the can $\frac{2}{3}$ full with crushed ice. Then, he should add salt to the top of the can, and mix with a spoon.



What happens? Soon, he will see frost form on the outside of the can.

Why? The salt melts the ice, actually making the mixture inside the can even colder. Then, water vapor in the air condenses into frost on the outside of the freezing-cold can. Outdoors, frost forms when the temperature is below freezing and water vapor freezes into ice crystals on surfaces like windows, leaves, and the ground. 

MATH CORNER

First to 100

Add, subtract, multiply, or divide? You decide which one will get you to 100 first!

Materials: a sheet of graph paper and a colored pencil or marker for every player, dice



1. Each person should draw a box around a 10 x 10 grid (100 boxes) on his graph paper. The object is to be the first person to color in all 100 squares.
2. The first player rolls two dice and adds, subtracts, multiplies, or divides the two numbers shown—his choice. Then, he announces the answer and colors in that number of squares. *Example:* Roll 6 and 5, multiply 6 x 5, and color in 30 squares.
3. Continue taking turns and using the numbers rolled. Things will get tricky since you have to color in exactly 100 squares—no more, no less—to be the winner! 

PARENT TO PARENT

Bringing math home

At our parent-teacher conference last month, the teacher said it would help our daughter Lizzie if we had fun with math at home. I thought about it afterward and realized that while we've always made time to read to our children each day, we don't spend much family time on math.

Now when Lizzie asks to play a board game, I suggest ones

like Mathable or Make 7 that involve numbers. I also asked the school librarian for math-related stories to read at bedtime.

Finally, we take turns posing a math question of the day. Sometimes it's an equation, and sometimes it's a real-life problem, such as how many pizzas to order for her soccer team's party. Now Lizzie looks forward to answering—or asking—the question each day! 



OUR PURPOSE

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

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