Intermediate Edition

Math+Science Connection

Building Understanding and Excitement for Children

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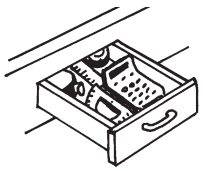
South Seneca Elementary School
Mr. Adam Rundell, Principal

INFO BITS

Our math drawer

Let your youngster stock a drawer in your kitchen with math tools. He might include a ruler, tape measure, timer, protractor, calculator, and measuring cups and spoons. Then, ask him to do real-life tasks like measuring the width of your refrigerator space or timing hard-boiled eggs.



Earth's neighbors

Jupiter is about 11 times bigger in diameter than Earth! Encourage your child to make play dough models of planets to scale. If Earth's diameter is 1 inch, what is Jupiter's? (11 inches) Help her look up other planets online and create models of them. *Idea:* She might use food instead. If Mars is a pea, Earth could be a blueberry (about twice as big in diameter).

Web picks

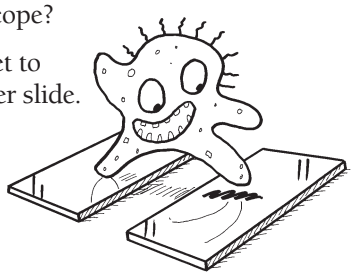
At *counton.org*, your youngster can play games in many areas of math, including fractions and geometry.

Open the world of coding to your child at *crunchzilla.com/code-monster*. A cute monster will teach him programming basics as he draws simple boxes.

Just for fun

Q: Why did the germ cross the microscope?

A: To get to the other slide.



Playful multiplication practice

Learning multiplication facts is fun with these games your child can play with friends or family.

Claim the product

On separate index cards, have your youngster write answers (*products*) for the 3s multiplication facts. So she would write 3 (because 3 x 1 = 3), 6 (3 x 2 = 6), and so on up to 36 (3 x 12 = 36). Lay the cards faceup.

To play, roll two dice. Add the numbers, and multiply their sum by 3. (*Example:* Roll 2 and 5, add 2 + 5 = 7, and multiply 7 x 3 = 21.) Take the card showing that product (21). If the card has already been taken, your turn ends, and the next player rolls. When all the cards are claimed, the player with the most cards wins. Play again with other sets of facts like 4s or 7s.

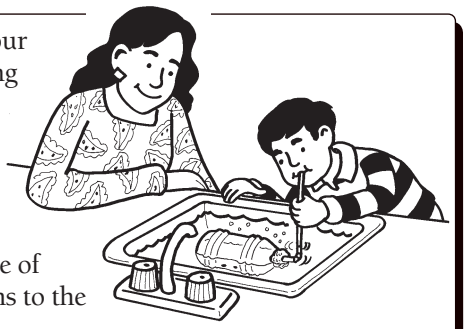
Multiplication "Whammy!"

Help your child write 30 multiplication problems (5 x 7, 4 x 9) on the ends of separate craft sticks. Then write "Whammy!" on 6 craft stick ends. Put the sticks in a cup with the printed ends down.

Take turns choosing a stick and giving the answer. If you're correct, keep the stick. If not, put it back in the cup. Draw a "Whammy!" and you'll have to return 2 of your sticks to the cup. The first player to collect 10 sticks wins.

Build a submarine

How can a submarine sink *and* float? Your youngster will discover *buoyancy* by making his own sub.



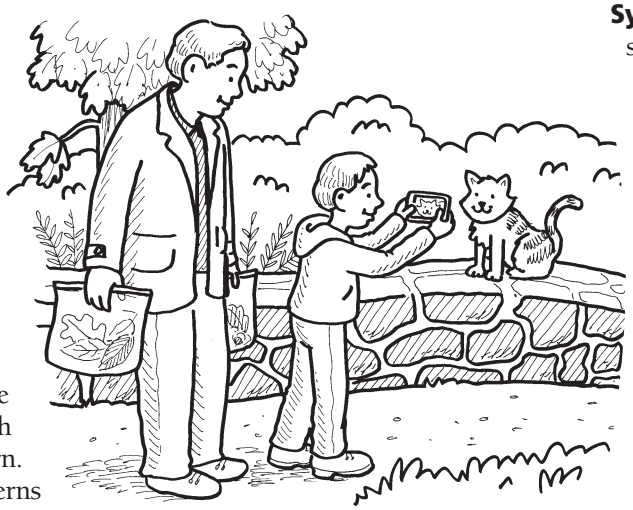
First, your child can put one end of a straw into an empty water bottle. He should seal the top with clay to hold the straw in place. Next, use a knife to cut a row of three dime-sized holes along one side of the bottle. Have him tape three stacked coins to the bottle on either end of the row of holes.

Now let him put his sub in water. As water displaces the air in the bottle, the sub sinks. But if he blows into the straw, air displaces the water—creating buoyancy—and the sub rises! This is how real submarines work: Air is pumped in to raise them to the surface.

Outdoor patterns and symmetry

From zebras to sunflowers, nature is full of patterns and symmetry. Your child can look for examples with these ideas.

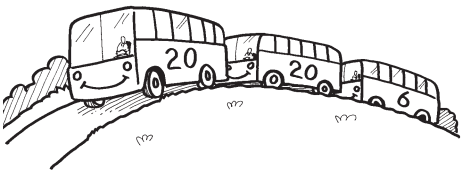
Patterns. Together, go on a pattern hunt outside. Your youngster could spot a striped cat. Or he might notice flowers that have the same number of petals in the middle, with more and more petals in each layer moving outward—it's a spiral pattern. Have him draw or take photos of the patterns he spots.



Symmetry. Leaves, butterflies, spiderwebs, and fruits can all be examples of symmetry in nature. To find leaves that are symmetrical (each half is a mirror image of the other), your child could make rubbings with ones from the ground. He should tape each leaf to a table, cover with white paper, and gently rub with the side of an unwrapped crayon. By folding the rubbing in half, he will see if it's symmetrical. And the place where he folded it in half is the *line of symmetry*.

PARENT TO PARENT Units matter

My daughter Virginia was losing points on math assignments because she wasn't labeling her answers with "units." In one problem, she was asked how many buses 46 students would need if 20 students could fit on each bus. Her answer was 3, and the teacher wrote "3 what?" on her paper.



When I asked Virginia what her response would be, she said 3 students. I asked, "You mean 3 students are going to carry all the other students on their backs?" She laughed and realized her mistake. She decided to draw 3 buses (the real answer) and mark where the 46 students would fit—20 on the first bus, 20 on the second bus, and 6 on the third bus.

Now Virginia shows me her story problems and explains them to me, especially the units in her answer. She double-checks to make sure she wrote "5 cars" and not "5 monkeys," and we have a good laugh.

OUR PURPOSE

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

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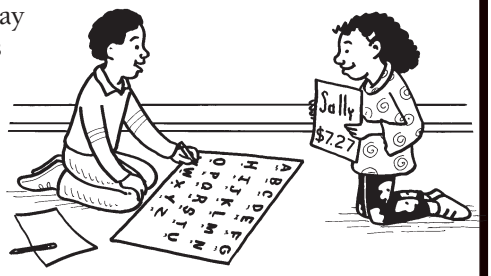
MATH CORNER How much is your name worth?



Your youngster will love this "rich" way to practice counting money. All he needs is paper and a pencil.

To set up the activity, ask your youngster to write the letters A–Z in rows across a sheet of paper, leaving space between each row. Next, he can write a random value under each letter. The letter A might be 53 cents, B $2.43, C $1.00, D $4.24, E 42 cents, and so on.

Then, challenge him to total up what his name is "worth." For instance, *Abe* would add the values for A, B, and E and get $3.38 (53 cents + $2.43 + 42 cents = $3.38).

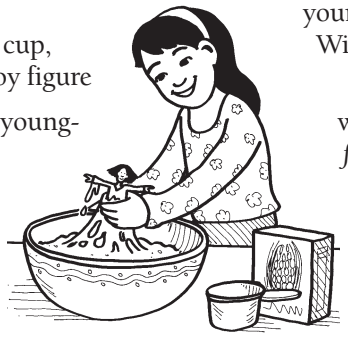
What are other family members' names worth? Who has the most "expensive" name?

SCIENCE LAB Quick! It's quicksand

It turns out that moving "quickly" is *not* the thing to do in quicksand. Your child can see why in this experiment that lets her explore properties of matter.

You'll need: measuring cup, cornstarch, bowl, water, toy figure

Here's how: Have your youngster measure 2 cups cornstarch into the bowl and gradually add 1 cup water, mixing with her hands. Now she should put the toy figure into the "quicksand" and try to "rescue" it, first by wiggling it and then by lifting it up slowly and gently.



What happens? The figure escapes more easily when your youngster removes it gently. Wiggling leaves it stuck.

Why? Cornstarch and water form a *non-Newtonian fluid*, much like quicksand, meaning it can demonstrate properties of both a solid and a liquid. When a force is applied, it's solid, while gentle or no force makes it liquid.