Intermediate Edition

Math+Science Connection

Building Understanding and Excitement for Children

September 2012

Woodrow Elementary School
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INFO BITS

How old am I?

Ask your child how old he is. The catch? You want his age in months, days, minutes, or seconds. He'll have to decide how to approach each problem and then solve it. Suggest that he use paper and pencil and check his answers with a calculator. But watch out if he asks how old *you* are in seconds!

Jigsaw challenge

Working a jigsaw puzzle is not only a great family activity, it's a good way to practice sorting and classifying. Before you start, have your youngster sort the pieces into two groups—edge and inside. Or have her sort the pieces by color or pattern. Then, put the puzzle together, section by section.

Book picks

In *Measuring Penny* (Loreen Leedy), Lisa's homework is to measure something using different tools. She chooses her dog, Penny, and discovers her tail is the length of a dog biscuit and her nose is an inch long.

Your child will be fascinated to learn that more than 600 plants eat meat! Show him the world of the Venus flytrap, the sundew, and more in *Hungry Plants* by Mary Batten.

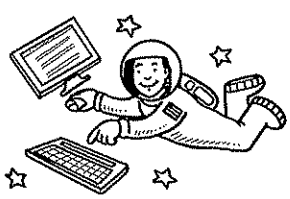
Worth quoting

"It is better to know some of the questions than all the answers."
James Thurber

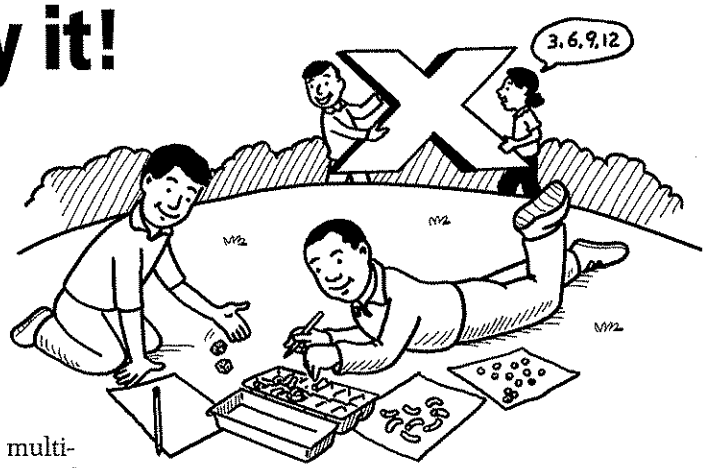
Just for fun

Q: What is an astronaut's favorite place on a computer keyboard?

A: The space bar!



Multiply it!



As your child moves up a grade, he's likely to encounter more multiplication in math class. Give him fun practice at home with these ideas.

Roll it

Use dice to practice multiplication facts up to 6 x 6. Take turns tossing two dice and multiplying the two numbers together. *Example:* Roll 2 and 5, and multiply 2 x 5 = 10. Have your child record each new equation. How many tosses does it take to make all the possible combinations? Ask him how he knows he has them all.

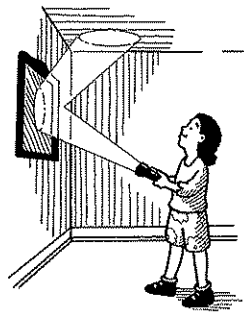
Display it

Turn empty egg cartons and small objects (dry macaroni, beads) into multiplication displays. For 4 x 6, your youngster would put 6 macaroni pieces into 4 egg cups each. To get the answer, he can count by 6s (6, 12, 18, 24). Next, flip the problem (6 x 4). When he changes the arrangement to 6 groups of 4, he will count by 4s (4, 8, 12, 16, 20, 24) and find the answer is the same! This illustrates the *commutative property* (numbers can be multiplied in any order).

Rhyme it

Challenge your child to make up silly rhymes for multiplication facts he has trouble remembering. For 8 x 7, a tricky one for many kids, he might say, "When 8 is in a fix, he remembers 8 x 7 = 56." Have him write each rhyme on a sheet of paper, illustrate it, and staple the pages into a book.

Upon reflection



What does bouncing a ball off a wall have to do with how we see light? Your youngster can try this activity to find out.

First, let her throw a ball against a wall. What does she notice? (The ball bounces back.) Have her bounce it at different angles and observe where it bounces back. Then, explain that light bounces off things, too, and this is called *reflection*.

To demonstrate, have her stand in a darkened room and shine a flashlight at a mirror. Ask her to notice where the light shines in the room. Tell her to move the flashlight around to create different angles for the light beam. Where does the light shine each time? Finally, put an object in different spots in the room and have her shine the flashlight on the mirror so that the light beam hits the object. She'll see that light reflects (or bounces) off the mirror to go in different directions.

Word problem strategies

Does your youngster get stuck on word problems? Tap into her learning style and interests to help her succeed.

Draw a picture. If your child is a visual learner or likes art, encourage her to sketch the problem. She might even use stick figures to turn it into a simple comic strip. Drawing the problem will help her pull out the important details, ignore extra words, and visualize what she has to solve.

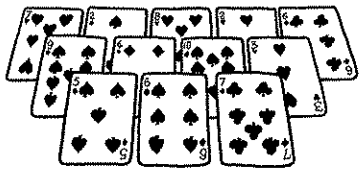
Act it out. Some kids love to put on shows. If this is your youngster, have her enlist her little brother (or you!) and act out word problems. She can count out the objects mentioned, perform the task in the word problem, and see the answer that results.

Create a story. Perhaps your child likes to read and write. Suggest that she rewrite the problem in her own words. Or she could create her own word problems that are similar to ones she's working on. Suggest that she use ideas from her daily life or make up scenarios. If she thinks she can write word problems as well as solve them, she'll feel she has "power" over word problems.

MATH CORNER Equation game

Use a deck of cards for a game that gives your youngster practice in math operations. Here's how.

Remove the face cards, and deal five cards to each person, faceup in a row. Place the remaining cards facedown in a pile. (Aces = 1.)



Take turns drawing a card. See if it will make an equation (using addition, subtraction, multiplication, or division) with two faceup cards that are side by side. For instance, if you draw a 6, and you have a 4 and a 10 next to each other, lay the 6 down under them (6 + 4 = 10). If you can't make a move, put the card on the bottom of the pile. Play until no more moves can be made. The person with the most cards on his side wins.

Challenge: Play a rapid-fire version where players don't wait for each other to finish their turns. Just make your moves as quickly as possible and draw your next card.

OUR PURPOSE

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

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Q & A The relevance of math

Q: *My child is beginning to ask why she needs to learn so much math. She's already complaining, "But I'll never need to know this!" What should I tell her?*

A: Look for opportunities to show your daughter how you use math on a regular basis. When you're doubling a recipe for company, talk through the problem out loud: "There will be 8 of us for dinner, and this recipe serves 4. It calls for $\frac{3}{4}$ cup of rice. How much rice do we need?"

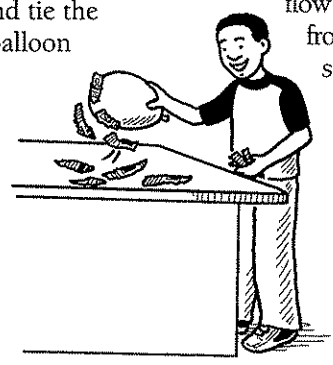
Or say you're hanging a picture and want to center it between two windows. Ask her to hold the tape measure at one end and help you figure out the measurements. By making math relevant to your everyday life, she will start to understand why math will be important in her life, too.

SCIENCE LAB Static cling

Your youngster has probably gotten a shock from touching a doorknob or even another person. With this experiment, he will see why.

You'll need: newspaper, balloon, wet cloth

Here's how: Tear up newspaper into small pieces. Blow up and tie the balloon. Then, rub the balloon several times on your (clean, dry) hair, and quickly hold it near the paper. Next, rub the wet cloth over the entire balloon, and repeat the experiment.



What happens? When the balloon is dry, the paper jumps toward it. When it's wet, the paper doesn't move.

Why? Rubbing the balloon against certain materials, such as hair, transfers electrons and traps a negative static charge in the balloon. That charge attracts the paper. But the wet surface allows the electrons to flow out and keeps the static charge from building up. That's why static electricity is more common on dry days than on wet days.

Fun fact: Photocopiers (like Xerox machines) use static electricity, as negatively charged black particles (toner) are picked up by positively charged paper.