Intermediate Edition

Math+Science Connection

Building Understanding and Excitement for Children

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District School Board of Pasco County
Title I

INFO BITS

Add the letters

Who has the most "expensive" name in your family? Have your child assign a money value to each letter in the alphabet. Then, let her add up the "price" of each name. Can she change the values so her name costs 50 cents more than yours? As she adjusts the prices, she'll work on addition, subtraction, and decimals.

In motion

On a smooth surface, lay down four checkers in a row with sides touching. Ask your youngster to slide a fifth checker so it hits the first one. The checker at the end moves, but the rest stay still! Does he know why? (Energy from the sliding checker passed from one checker to the next. The last one couldn't pass on its energy, so the energy turned into motion.)

Book picks

Short stories introduce your child to math greats and what they discovered in *Mathematicians Are People, Too: Stories from the Lives of Great Mathematicians* (Luetta Reimer, Wilbert Reimer).

A dog who rescues cats. A snake with two heads. Pigs who play soccer. These are just some of the stories that will thrill your youngster in *125 True Stories of Amazing Animals* (National Geographic Kids).

Worth quoting

"Millions saw the apple fall, but Newton was the one who asked why."
Bernard Baruch

Just for fun

Q: When do giraffes have eight feet?

A: When there are two of them.

Be an algebra detective

Does your child like to search for clues, unravel mysteries, and solve cases? Then he's ready to get on the path to algebra! Share these ideas to work on early algebra skills at home.

Discover patterns. Link together Lego blocks in a pattern (*example:* red, red, yellow, green, red, red, yellow, green). Ask your youngster to figure out what color the 29th block would be—and encourage him to come up with the answer in his head. Then, he can extend the pattern with Legos to see if he was right.

Make numbers. Have your child name a number (12), and take turns giving different ways to express it (7 + 5, 3 x 4, 2 x 3 + 6, 5 x 3 – 3). How many ways can you come up with for various numbers? *Idea:* Let your youngster record the answers, writing each one as a number sentence (7 + 5 = 12). Then, he can pair them up as equalities, such as 7 + 5 = 3 x 4.

Solve for x. Write down a problem like 9 + x = 17, and tell him the mystery is "What is x?" He might think, "9 plus what number will give me 17?" (8). Next, give him a problem like 2x + 5 = 11. To find x this time, he could "guess and check"—substituting one number at a time for x. He could say, "2 times 1 plus 5 equals 7, so x is not 1; 2 times 2 plus 5 equals 9, so x is not 2"; and so on until he finds the answer (3).

Mixed messages

The different parts of the brain have different responsibilities. This mind-boggling activity is a fun demonstration.

Ask your youngster to sit on a chair and make clockwise circles with her right foot. While still circling her foot, she should draw a "6" in the air with her right hand.

She will be shocked to find that her foot changes direction—it starts to circle counterclockwise. Why? When she drew a 6 in the air, she circled her finger counterclockwise. But because her foot was going clockwise, her brain got confused. It's hard for the brain to handle two different parts of the body moving in opposite directions at the same time.

Try it yourself, and see what happens!

Let's talk math!

Math might be filled with numbers, but the key to understanding and talking about math can also lie in words. Try these activities to get your youngster using—and enjoying—the language of math.

Word wall

Encourage her to turn a bedroom wall into a "math word wall." Each night she can pick a word from her math homework or textbook. Have her write the word on an index card, illustrate it, and hang it on her wall. *Note:* If her first language is not English, she could add the word in her native language, too. At bedtime, take turns giving a meaning, and the other person has to say the word.

Riddles

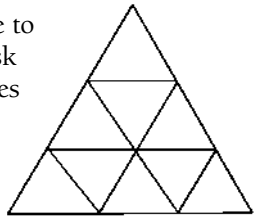
Make up riddles for math terms. For instance, your child might say, "I have two rays. I am 95 degrees—but I am not a hot day. What am I?" (an obtuse angle). Suggest that she write down the riddles to create her own math riddle book.

Vocabulary game

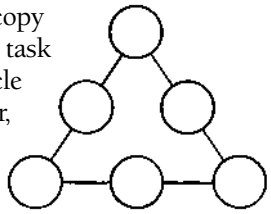
To start, one person says a math term (*divide*), and the next person has to say a word that relates (*dividend*) and explain the relationship (*the dividend is the amount you divide*). Continue playing until you can't think of any more words. The last person to say a word gets to begin a new chain.

MATH CORNER Triangle teasers

Math puzzles are a fun way to build thinking *and* math skills. Here are two to try:



- Show this figure to your child, and ask how many triangles he sees. If he says 9, suggest that he look again. *Hint:* He should look for different-size triangles. (The answer is 13.)



- Next, let him copy this triangle. His task is to fill each circle with one number, 1–6, so that each side of the triangle adds up to 9. The trick? He can use each number only once.

Idea: Challenge him to make up his own math puzzles for you to solve.

SCIENCE LAB Magnetic field

How strong is a magnet's force? Let your child investigate with this experiment.

You'll need: bar or horseshoe magnet, paper clip, paper materials of different thicknesses (*examples:* notebook paper, newspaper section, magazine, paperback book, index cards)

Here's how: First, have your youngster use the magnet to pick up the paper clip. Then, he could put the notebook paper on top of the clip and see if the magnet still works. Next, he can try to attract the paper clip through the newspaper, magazine, and book (one at a time). Finally, have him test how many index cards he can put between the paper clip and magnet for the attraction to still work.

What happens? Magnetism can act through objects. But when the distance between the magnet and the paper clip becomes too great, there is no longer an attraction.

Why? There is a magnetic field around the magnet, but as an object moves farther from the magnet's pole, the field becomes weaker. Attraction decreases as distance increases—an *inverse relationship*.

Q & A Struggling in math?

Q: *I think math is harder for my daughter this year. But by the time I get home from work, she doesn't feel like talking about school. How will I know if she is having trouble?*

A: Try to find a good time, perhaps right after dinner, to go through your child's backpack with her. Seeing her graded papers will give you a better idea of how she is doing. Ask what she worked on in math that day and what she has for homework. Listening to how she speaks about math can give you clues about whether she is struggling.

If your daughter says math is "too hard" or she just doesn't like it, email or call her teacher. He can let you know how she is doing and whether she needs extra help.

OUR PURPOSE

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

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