Intermediate Edition

Math+Science Connection

Building Understanding and Excitement for Children

January 2018

Ellendale Elementary School

INFO BITS

Are you a square?

Have your child stand with his arms stretched out to the sides. Measure his height and his arm span (from fingertip to fingertip). If they're about the same, he's a square! Then, let him measure other family members. Who is closest to a square in your family?

Stronger muscles

Why is it important to exercise our muscles? Ask your youngster to crumple one sheet of paper into a small ball with one hand. How do her hand and arm muscles feel? Then, she should crumple five more sheets, one at a time. How are her muscles feeling now? Explain that the more paper she crumples, the harder her muscles have to work—and the stronger they become.

Book picks

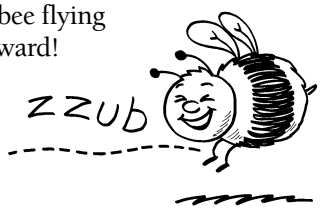
Edgar Allan Poe's Pie: Math Puzzlers in Classic Poems (J. Patrick Lewis) is a delightful twist on poetry that will challenge your youngster to solve math riddles.

Imagine going to Mars! Your child can do that and more by learning how humans would prepare for a voyage to the red planet in *Mission: Mars* (Pascal Lee).

Just for fun

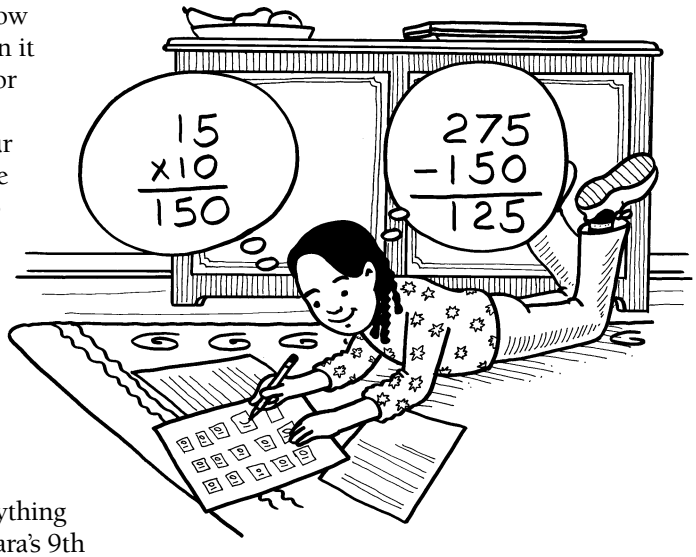
Q: What says "Zzub, zzub"?

A: A bee flying backward!



Wonderful word problems

"We got 2 inches of snow per hour for 6 hours. Then it snowed 1 inch per hour for 3 more hours. How much snow fell altogether?" Your youngster can easily figure out the snowy answer (15 inches!) using word problem strategies like these.



Spot important words

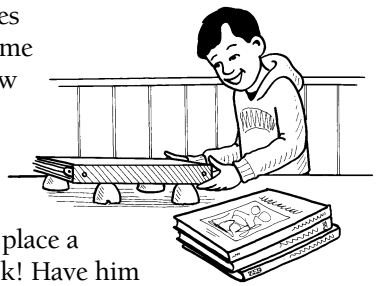
Encourage your child to underline information she needs to solve a word problem and cross out anything irrelevant. *Example:* "At Sara's 9th birthday party, there were 4 bunches of 4 balloons. Unfortunately, 2 balloons floated away, 1 purple and 1 green. How many were left?" She'd underline "4 bunches of 4" (multiply 4 x 4) and "2 floated away" (subtract 2). So (4 x 4) – 2 = 14 balloons. On the other hand, it doesn't matter—math-wise—how old Sara is or what color the lost balloons are.

Sketch it out

Your youngster can draw her thinking to decide how to approach a word problem. *Example:* "A school has 275 students and 15 classes, with 10 girls per class. How many boys are in the school?" She could draw 15 boxes (classrooms) and write 10 in each to represent 10 girls. She'll see that she needs to multiply to find the number of girls (15 x 10 = 150) and subtract her answer from the total number of students to determine the number of boys (275 – 150 = 125).

Super-strong eggs

Eggs don't crack when hens sit on them. Does your child know why? The secret lies in the dome shape of the eggs, and this experiment will show him just how strong eggshells are.



Break two eggs in half (perhaps make scrambled eggs with the insides), and rinse the shells. Let your youngster set the four eggshell halves on a table, dome sides up, then place a notebook on top of them. The shells won't crack! Have him predict how many books they'll hold before they crack and then stack books on top, one at a time. How close does his prediction come?

The dome shape distributes the weight evenly all around the sides of the egg, making it easier for the shell to support the load.

X and Y mark the spot!

With this activity, your youngster can use x and y coordinates to find hidden "treasure."

1. Give each player a sheet of graph paper. Starting near the bottom left of your page, number the horizontal lines up the left side 0, 1, 2, and so on up to 20. This is your *y-axis*. Beginning at the same 0, number the vertical lines across the bottom to 20—this is your *x-axis*.

2. Each of you secretly picks one number from your x-axis and one from your y-axis and draws a tiny treasure (perhaps a star or a heart) on the intersection of those lines. So if your child chose 3 from the x-axis and 4 from the y-axis, his treasure's *coordinates* are (3, 4).

3. Give directions that let the other players plot your coordinates on their grids. Your youngster might tell you to start at (3, 2) and move up 2 spaces. Or he could have you begin at (8, 4) and move left 5 spaces.

4. Continue until all the treasures have been located. Add new treasures, and play again.

SCIENCE LAB DIY frost

When it's cold outside, your youngster might see frost on the windows or grass. Using a few household items, she can make her own frost and understand how it forms.

You'll need: empty can (rinsed, label removed), ice, salt, tablespoon

Here's how: Have your child fill the can half full of ice, then add 4 tbsp. salt, and stir 30 seconds. She can set the can aside and check it after 10–15 minutes.

What happens? Frost will form on the outside of the can up to the level of the ice.

Why? Salt lowers the melting point of ice, which means the salt and ice together make the outside of the can very cold—below the freezing point of water. Water vapor in the air settles (or *condenses*) on cold surfaces. So when the water vapor condenses on the can, it freezes into tiny pieces of ice, or frost.

OUR PURPOSE

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

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MATH CORNER Measurement relay race

Ruler, yardstick, or measuring tape? Knowing which tool to choose is the first step in measuring accurately. Your youngster and his friends can practice with this cooperative relay race.

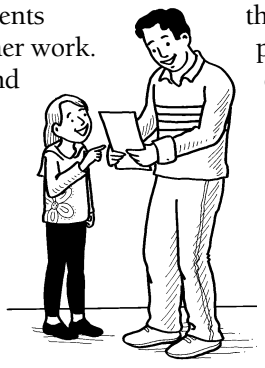
Have the children place measurement tools at one side of a room. On separate slips of paper, let them write different things to be measured (circumference of your head, height of the refrigerator, length of a house key). Put the slips in a bowl on the opposite side of the room.

Take turns drawing a slip, running to grab the tool that would be best for measuring the item, and racing to measure it. Your child might choose a measuring tape for his friend's head because the tape can bend. Another player might pick a ruler for a small key or a yardstick for a larger item like the fridge.

After they've used all the slips, they could come up with new items to measure and play again.

PARENT TO PARENT Let's see your work

My daughter Amy would sometimes lose points on math assignments because she forgot to show her work. She said she didn't understand why she had to write down all the steps if she could do them in her head.



I asked her to show me a problem that she didn't show her work on and got wrong. I told her I bet she'd find her mistake if she wrote out each step. She quickly noticed that she had made a simple computation error in the first step of a two-digit multiplication problem, which threw off the other steps. She said it was no wonder her teacher thought she needed extra help with multiplication. In reality, she had just made a careless error.

Now Amy shows her work most of the time, and she's proud that her math grades are improving.