Intermediate Edition

Math+Science Connection

Building Understanding and Excitement for Children

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Swanson Rd Intermediate School

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INFO BITS

Rhythm of poetry

Read a poem together. Then, see if your youngster can identify a pattern. Does every other line rhyme or have the same number of beats? Noticing the rhymes and rhythms will help her hear the math in poetry. *Idea:* Suggest that she use patterns to write her own poem.

Design a zip line

Challenge your child to engineer a "zip line" for a toy. Let him tie a string between two doors and create a safety harness for the toy from twist ties or rubber bands. Have him give the toy a push—does it make it all the way across the zip line? If not, he could improve on his design by trying different materials for the harness or adjusting the slope of his zip line.

Book picks

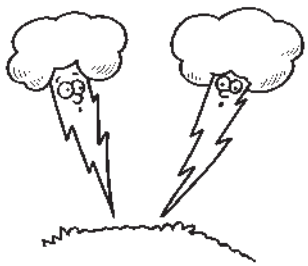
Youngsters can explore numbers in a wacky way with *How Many Guinea Pigs Can Fit on a Plane? Answers to Your Most Clever Math Questions* (Laura Overdeck).

The Science of Goo! From Saliva and Slime to Frogspawn and Fungus (DK) bursts with strange facts and gooey trivia that are bound to stick with your child.

Just for fun

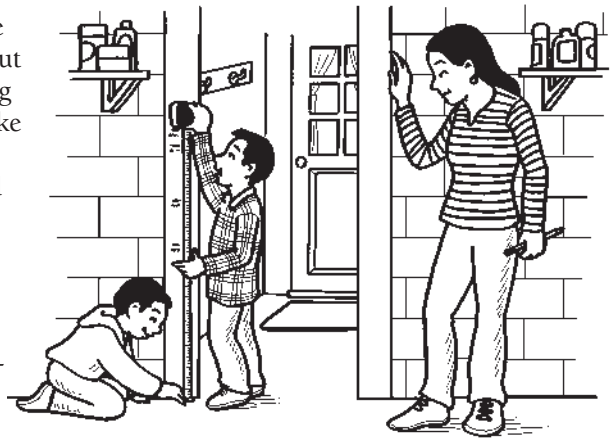
Q: What did one lightning bolt say to the other?

A: You're shocking!



How far? How tall?

Accurate measurements are important not only in math, but also in science and engineering—and in everyday activities like sports, sewing, and planting. Your youngster will be excited to practice measurement with these real-life ideas.



Measure distance

Coaches and PE teachers measure running courses precisely to make sure all students run the same distance. Using a yardstick or tape measure, have your child carefully measure a 50-yard course outside (marking it in 10-yard increments). Then, family members can take turns running a 50-yard dash and timing each other. *Idea:* Let him make courses for other distances, perhaps 60 meters or 100 meters.

Measure height

Children love to discover they've grown even $\frac{1}{2}$ inch, so show your youngster how measuring accurately can determine his true height. Ask him to stand straight with his feet together and his back and heels against a wall. Make a light pencil mark where the top of his head meets the wall, and help him use a tape measure to determine the distance from the floor to the mark. He can write his height at the mark (say, 55 inches), then measure other family members and record their heights. *Idea:* Measure him every six months so he can track his growth.

Tip: A carpenter's "golden rule" is "Measure twice, cut once." Encourage your child to double-check his measurements, too. If he gets the same result, chances are he measured correctly. If not, he should measure until he gets the same measurement twice.

It's an earthquake!

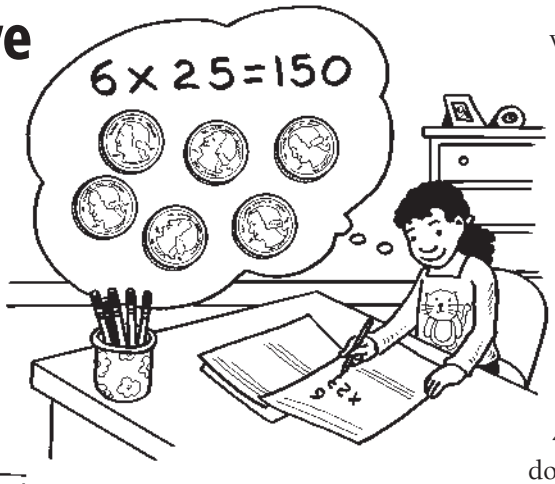
With this tasty activity, your child will learn about earthquakes—and enjoy eating the results.

First, have her spread cream cheese on wax paper and lay two graham crackers on top, side by side. The graham crackers represent *plates* in Earth's top layer (*crust*) and the cream cheese represents the second layer (*mantle*). Next, she can model an earthquake by slowly rubbing the crackers together, back and forth. Crumbs will come off, and the crackers will break.

When plates in the crust slide past one another, they sometimes get caught on each other. Then, they suddenly break apart along the edges where they meet (the *fault line*), shaking the ground.

Estimate, then solve

Estimating answers to math problems before solving them gives your youngster confidence that her answer is right (Yay!) or tells her to try again (Oops!). Suggest these strategies.



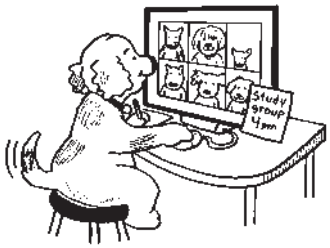
Make it familiar. Ask your child to think of something familiar she could use to estimate an answer. For 6 × 23, she might think, "23 is close to 25, and a quarter is 25 cents. Since 6 quarters would be $1.50 or 150 cents, 150 is a good estimate." Now she can compute the actual problem (6 × 23 = 138). She'll know her answer is reasonable because it is close to, but smaller than, her estimate.

Make it simpler. Have your youngster round one of the numbers to the nearest 10 so it's easier to use. Say she's solving 42 ÷ 5. If she rounds 42 down to 40, she would estimate 40 ÷ 5 = 8. Because she rounded down, she'll know the answer will be slightly more than 8 (42 ÷ 5 = 8, remainder 2).

Q & A Study strategies for math tests

Q: *What are some strategies my son can use to study for math tests?*

A: Your child's graded math assignments make great study tools because they include the types of problems he's likely to see on tests. Encourage him to review them and correct any problems he got wrong. He could also change the numbers to create new practice problems, then check his answers on a calculator.

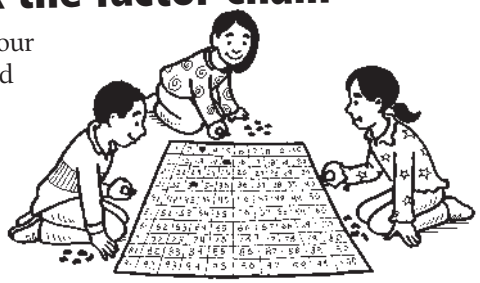


Your son might also hold virtual study sessions with a friend. They could make up quizzes for each other. Creating, taking, and grading the quizzes will all help them study—together.

Finally, if your son doesn't fully understand something that's going to be on a test (say, how to convert fractions into decimals), he should ask his teacher for extra help.

MATH CORNER Don't break the factor chain

With this game, your youngster can practice using factors and multiples. Factors multiply to make a number (4 and 6 are factors of 24 because 4 × 6 = 24). Multiples are the result of one number times another (24 is a multiple of 4 and 6).



1. Draw a 10 × 10 grid, and number the boxes 1–100. Using dry beans as tokens, place one on any square (say, 33).

2. The first player puts a bean on any factor or multiple of that number (for instance, 3, because 3 × 11 = 33, so 3 is a factor of 33).

3. The next player marks a factor or multiple of the new number (3). *Example:* Cover up 15, since 3 × 5 = 15, so 15 is a multiple of 3. Keep taking turns, each time marking a factor or multiple of the last number played.

4. The last person who can make a move wins.

SCIENCE LAB See the water glow

Does your child know that 90 percent of deep-sea creatures "glow" in the dark? This demonstration lets him model *bioluminescence*—an animal's ability to give off light.

You'll need: measuring cup, water, clear jar, pliers, highlighter, disposable gloves, flashlight

Here's how: Ask your youngster to measure 1 cup water into the jar while you use pliers to remove the stopper from the bottom of a highlighter.

Wearing gloves, he can pull out the felt tube, put it in the jar, and squeeze out some of the ink. Now let him turn off the lights and shine a flashlight on the jar.

What happens? The water appears to glow.

Why? A chemical in highlighter ink absorbs and then reflects light. In bioluminescence, chemicals in animals produce light so the creatures can see in the dark. That's why the animals and the water around them look like they're glowing!

OUR PURPOSE

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

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