Intermediate Edition

Math+Science Connection

Building Understanding and Excitement for Children

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Cape Central Middle School
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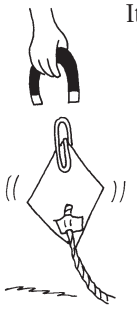
INFO BITS

World records

Here's a fun way for your youngster to compare numbers. Encourage her to look up world records (fastest animal, farthest Olympic long jump). Then, help her set her own records by timing her speed or measuring her jumps. She could subtract her records from those of the animal or Olympian to find the difference.

Up, up, and away



It's magnetism, not wind, that keeps this "kite" in the air. Ask your child to cut a kite out of paper. He should put a metal paper clip on one corner and tape a string to the opposite corner. If he holds a magnet close to the paper clip, the magnet attracts the clip, and the kite "flies."

Web picks

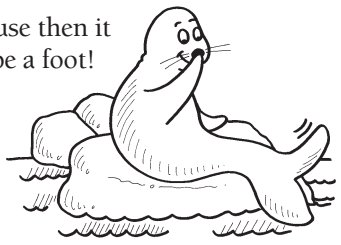
Break a math code, solve a math riddle, and try many more challenges at *nrich.maths.org/primary-upper.*

At *sciencebuddies.org/science-activities*, your child can find instructions for making marshmallows, using crickets to tell the temperature, and other science projects.

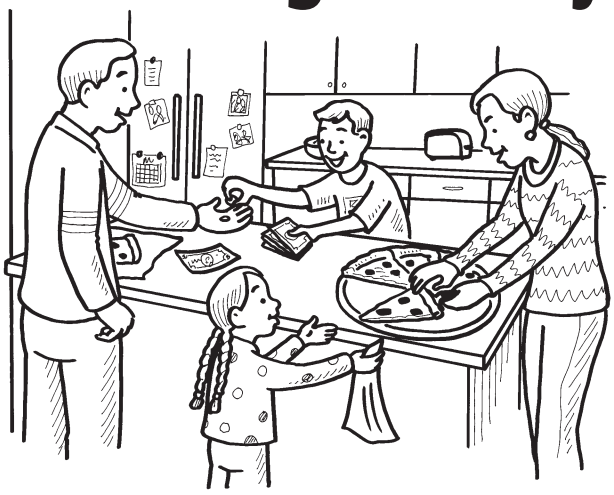
Just for fun

Q: Why isn't your nose 12 inches long?

A: Because then it would be a foot!



Use math to manage money



It's never too early for your child to learn about money management. In the process, he will count money, solve equations, and work with decimals. Try these ideas for building math skills *and* financial literacy.

Play pizzeria

Hold a pizza night, and let family members use board game money to "pay" your youngster for their slices. If 1 slice costs 64 cents and he's handed a $5 bill, how would he figure out the change? He might think that 0.64 to 0.70 is 6 cents, 0.70 to $1.00 is 30 cents, and $1.00 to $5.00 is 4 dollars. So he'd give back $4.36.

Calculate grocery deals

Have your child discover how comparison shopping can mean spending less. Ask what the better deal is: 5 lbs. of loose apples at $1.29 a pound, or a 5-lb. bag for $4.79. First, he'll need to find the price of 5 lbs. of loose apples. He might round $1.29 to $1.30 and think "$1.00 x 5 = $5.00 and $0.30 x 5 = $1.50. $5.00 + $1.50 = $6.50." When he compares his estimate to the price of the bag, he'll see that the bag is a better buy.

Make a budget

Encourage your youngster to create a personal budget. Have him add up how much money he might get in a year from an allowance, odd jobs, or birthday money. Then, he could divide by 12 for his monthly "income." Now, he can draw up a budget, setting aside a portion for spending, saving, and donating.

A hula-hoop ecosystem

It might seem quiet in your backyard, but there's actually a lot going on. Your youngster just needs to look down to discover a mini-ecosystem of living and nonliving things interacting with each other.

First, have her put down a hula hoop (or a circle of rope) to mark off her ecosystem. Then, on a round paper plate, she can draw and label what she observes. Perhaps she'll spot an earthworm poking out of the soil, a leaf with an edge nibbled off, or an interesting rock.

Your child should visit her ecosystem each day and draw her observations on a new plate. Look at the plates together, and ask her to describe how the ecosystem changes.

Creative arrays

Arrays make multiplication and division easy to see. Let your youngster arrange objects or pictures in even rows and columns and solve the problems they represent. Share these activities.

Draw and multiply. Write multiplication problems on index cards, such as 6 x 5 = __. Your child can draw an array to show each problem—perhaps 6 columns of hearts with 5 hearts in each row. She can solve by multiplying the number of columns by the number of rows (6 x 5 = 30). Encourage her to draw the array another way (5 columns and 6 rows). She'll see that the answer is the same (5 x 6 = 30). This shows the *commutative property* of multiplication—the order of the numbers doesn't matter.

Sculpt and divide. Give each other division problems, and make playdough arrays to solve. If you say, "28 ÷ 4," your youngster would roll the dough into 28 balls and arrange them in 4 rows. To find the answer, she should count the number of columns and answer, "28 ÷ 4 = 7." How would she rearrange the array to show 28 ÷ 7 = 4?

MATH CORNER

Collect the triangles

Not all triangles are the same. Your youngster can practice identifying different types of triangles with this game.

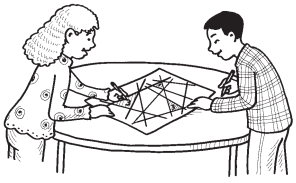
Kinds of triangles

Right: One angle is 90°.

Acute: All three angles are less than 90°.

Obtuse: One angle is greater than 90°.

1. Have your child and a friend use rulers and pencils to draw criss-crossing diagonal lines of various lengths all over a sheet of paper. This will create different kinds of triangles—right, acute, and obtuse.



2. Using a different color crayon, they can take turns shading one triangle at a time. Each player should write a point value inside: 1 point for an obtuse triangle, 2 for an acute triangle, and 3 for a right triangle.

3. When the last triangle is shaded in, they'll have a colorful mosaic! The player with the most points wins.

SCIENCE LAB

Vacuum power

Does your child know what a vacuum is? He'll find out with this clever experiment.

You'll need: cup, water, 2 drinking straws

Here's how: Have your youngster fill the cup with water and take a sip with one straw. Then, he should hold the second straw outside the cup and sip through both straws at the same time. Finally, he can put both straws in the water and sip from them together. *Tip:* At each stage, ask him to predict the outcome before he sips.

What happens? When your child sips with one or both straws in the water, the water comes up as expected. But when one straw is in the water and the other is out, he can't sip the water at all!

Why? Sucking on a straw in liquid creates a vacuum—or an empty space—which the water rushes in to fill. When he sucks on both straws (one in the water and the other out of the water), the air coming through the straw outside the drink prevents a vacuum from forming—so the straw in the water won't work.

Q & A

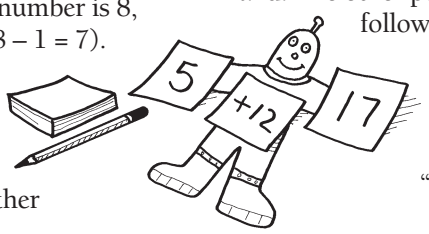
My "function robot"

Q: *My son is learning about functions in math. I don't remember doing those in school! How can I help him?*

A: Think of a function as a "rule" that tells you how to get from one number to another. For instance, if your rule is "– 1" and your starting number is 8, then your answer is 7 (8 – 1 = 7).

Have your child draw a "function robot" with a body and two hands. Label one hand "Input" and the other "Output." On separate sticky notes, write "rules" like "– 7" or "x 2, + 5." Then, let your child number 20 more sticky notes, 1–20.

Take turns sticking a rule (say, "+ 12") on the robot's body. Then, input a number (say, 5) by sticking it on the "Input" hand. The other person makes the robot follow the rule (5 + 12), writes the answer (17) on a blank sticky note, and places it on the robot's "Output" hand.



OUR PURPOSE

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

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