

Math+Science Connection

Intermediate Edition

Building Understanding and Excitement for Children

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Cape Central Middle School
Mr. Rex Crosnoe, Principal



INFO BITS

Which shape is out?

Explore geometry with this drawing activity. Ask your child to draw three *polygons* (closed figures), perhaps a triangle, a pentagon, and an octagon. Let her pick one that doesn't belong and explain why. She might say the triangle is the only one with all *acute angles* (less than 90°), or her octagon may be the only one with sides of unequal lengths.

Fingerprinted

Help your youngster see what detectives see—the uniqueness of fingerprints. Have him dip a fingertip into flour, shake off any excess, and press his fingertip to clear tape. Then, he can hold the tape up to a light to see his fingerprint. Doing the same for family members and friends, he'll discover no two are alike. *Fun fact:* Even identical twins have different fingerprints.

Book picks

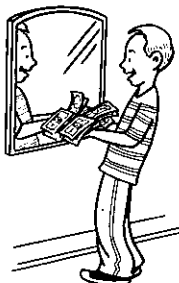
Does your child know where the name Google came from? In *G is for Googol* (David M. Schwartz), she'll learn about the number "googol" and many other math terms.

Kitchen Science Lab for Kids (Liz Lee Heinecke) makes rocket science—and other topics—easy, all with supplies found around your home.

Just for fun

Q: How can you double your money?

A: Look at it in a mirror.



Let's go to "math camp"

To keep your youngster's math skills sharp over the summer, try turning traditional camp activities into "math camp" activities. Consider these ideas.

Do crafts

Let your child create a "snake" with pipe cleaners and beads. After making a loop for the head, he can thread on beads so they'll be easy to count. He might make every 4th bead green (red, red, red, green) and count by 4s. Or he may switch colors every 5 beads.

Compute your snack

Add a pinch of mystery to snack time with an alphabet code. With your youngster, assign a random number to each letter (A = 24, B = 13, and so on). At snack time, take turns spelling out snacks for each other—by giving an equation to match each letter's number. For example, if he wants an apple, he

would write equations for A, P, P, L, and E, such as $97 - 73$ for A ($97 - 73 = 24$).

Play outdoor games

Gather players for a game of multiplication tag. Let everyone pick a number, 1–12, and form that number with masking tape on their shirts. When "It" tags someone, that person freezes and multiplies his own number by "It's" number. If he's a 7 and the tagger is 6, he'd say 42 ($6 \times 7 = 42$). If he answers correctly, he becomes "It" and tags the next person.



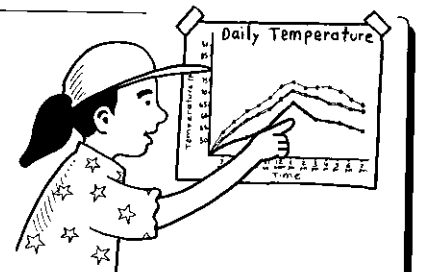
Graph the temperature

When is the temperature the best for bike riding or running through the sprinkler? Let your child track it to know.

1. Collect data. Have your youngster record the temperature hourly between breakfast and dinner for three days. *Note:* Hang up an outdoor thermometer for her to check (or she could use a free weather app).

2. Draw line graphs. She should label the bottom of her graph with hours (9 a.m., 10 a.m.) and the left side with temperatures (50°F, 55°F, 60°F). Now your child can plot temperatures for the first day, connecting them with a line. Let her plot the second and third days on the same graph, using a different color for each day.

3. Interpret the results. Looking at her graph, when is it usually the warmest? That might be the ideal time to run through the sprinkler!



Read all about it!

Whether online or in print, the newspaper is full of numbers. Here are ways your child can use the newspaper to play with math.

Year to year. Have your youngster find two years mentioned in articles. How many years apart are they? (1998 – 1985 = 13 years) If an article talks about something that happened 50 years ago, when was that? (2017 – 50 = 1967)

Scavenger hunt. Together, create a newspaper scavenger hunt. For instance, you might list: a baseball statistic higher



than .250, a 7-digit number, an ad that is about $\frac{1}{3}$ of a page. Give each player a copy and a different color marker. Share the newspaper sections, and see who can circle all the items first.

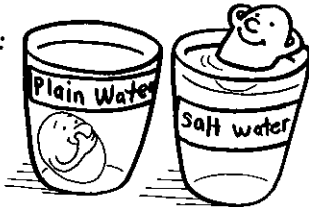
Cars for sale. Ask your child to find five cars for sale and list the prices from lowest to highest. *Example:* \$15,175, \$17,845, \$23,070, \$23,798, \$44,950. Rounding the prices to *benchmark numbers* (numbers easy to work with), how many of the lowest-price cars could she buy for the cost of the most expensive one? (About 3, since $3 \times \$15,000 = \$45,000$.)

SCIENCE LAB Floating on salt (water)

Utah's Great Salt Lake is known for being so salty that people float when they swim there. This experiment will show your child why that is possible.

You'll need: measuring cups and spoons, warm water, 2 clear glasses, salt, spoon, 2 eggs

Here's how: Have your youngster pour 1 cup water into each glass.



Then, he should stir 6 tbsp. salt into one glass until it dissolves. Now he can gently place 1 egg into the plain water and the other into the salt water.

What happens? The egg sinks to the bottom in the plain water but floats in the salt water.

Why? The egg is denser than plain water, but not as dense as salt water. That's because salt adds mass to water, making it denser. *Extension:* Test other substances like sugar, baking powder, or sand—will the egg float?



Q & A

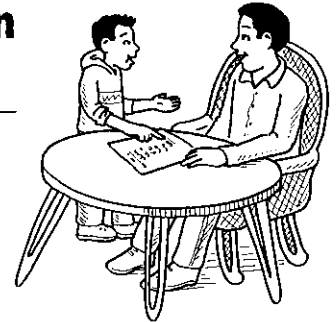
The many faces of division

Q: My son has been learning division at school. I recognize what he calls the "standard algorithm"—that's what I learned as long division—but I don't understand the other methods he uses. What should I do when he gets stuck?

A: Your son is learning different ways to divide not only to find what's comfortable for him, but also so he'll understand how division works.

The best idea is to ask him to show you how he did a particular problem. He will learn it better by explaining the method to someone else—and he will be proud to teach you something!

Also, you could suggest he check his work by solving the same problem another way. If his answers don't match, have him ask his teacher for help the next morning. And as he learns, you will, too.



MATH CORNER

Catch me if you can

Your youngster will practice early algebra skills while trying to capture opponents in this clever game for 2–4 players.

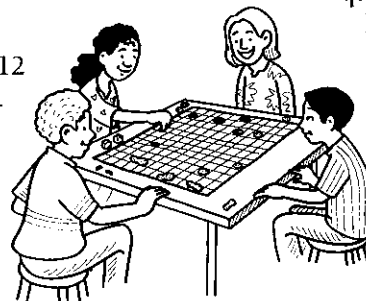
Materials: paper, pen, 5 tokens for each player, 2 dice

1. Have your child draw a 12 x 12 grid for a game board. Each player puts her tokens on any 5 squares.

2. The first player rolls the dice and uses the numbers rolled to make an algebra problem, where

a question mark replaces a number. For instance, she could turn 3 and 6 into $3 + ? = 6$ or $6 \times 3 = ?$

3. The player then moves a token one square at a time (vertically, horizontally, or diagonally) the value of the missing number (3 squares or 18 squares). If she lands on another player, that token is knocked out of the game. The last one with a token on the board wins!



OUR PURPOSE

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

Resources for Educators,
a division of CCH Incorporated
128 N. Royal Avenue • Front Royal, VA 22630
800-394-5052 • rfeustomer@wolterskluwer.com
www.rfeonline.com