Intermediate Edition

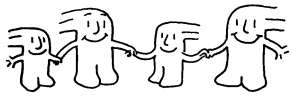
Math+Science Connection

Building Understanding and Excitement for Children

January 2017

District School Board of Pasco County

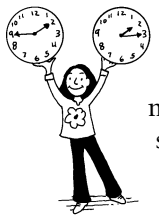
Title I



INFO BITS

Time check

Help your youngster practice figuring out *elapsed time*, or how much time has passed. Ask her the current time (say, 2:45). Then, pose questions like "How much time has passed since we left the post office at 1:15?" (90 minutes), and "What time will it be in 13 minutes?" (2:58)



Weather or climate?

Does your child understand the difference between *weather* and *climate*? Explain that weather refers to the conditions on a particular day, while climate is the average weather in an area over time. See how many examples you each can think of. For weather, he might say "thunderstorms" or "a low of 20 degrees." For climate, you could say "tropical" or "polar."

Book picks

When Alexander's grandparents give him a dollar, he feels wealthy! Find out how he manages his money in *Alexander, Who Used to Be Rich Last Sunday* (Judith Viorst).

Mistakes That Worked: 40 Familiar Inventions & How They Came to Be (Charlotte Jones) will delight kids with tales of how Silly Putty, Post-it Notes, and Velcro were invented.

Just for fun

Q: What kind of bed is not good for sleeping?

A: A river bed.

It's only logical

Math isn't just about numbers—it's about how those numbers work together. Boosting your child's logical reasoning will help him improve his thinking about how numbers relate to one another. Here are ideas.

What information do I need?

Take turns giving each other scenarios with a missing piece of information. What else does he need to know to solve the problem? *Examples:* "Four runners finished a race. Who won?" (He needs the runners' times.) "You want to order pizza for 10 boys at a soccer team party. How many large pizzas should you get if there are 8 slices per pizza?" (He needs to estimate the number of slices per player.)

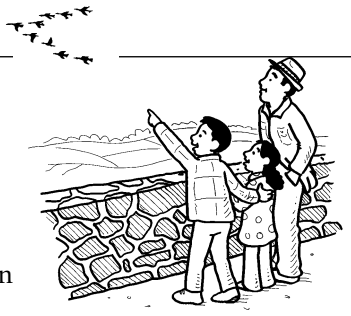
Be a game-changer

Suggest that your youngster recreate his favorite board game. He'll make a list of questions like what changes he wants to make, whether players would use dice or a spinner, and how to make the game fair. He can reason out the answers as he writes instructions.

Uncover secrets

Use logic to discover each other's hidden code! Let your child secretly write 3 digits, say 2 6 3, at the top of a sheet of paper and cover it up. Write your first guess underneath, maybe 6 1 3. He responds with an X below each number you have exactly right—the right number in the right space (3)—and an O for each right number in the wrong spot (6). Based on the response, make a more educated guess, perhaps 1 6 3. This time you would get X X. Keep going until you find his secret code. Then, swap roles. *Idea:* Challenge yourselves by using 4 digits.

Group behavior



What do elephants, geese, and people have in common? Each works within their group to accomplish a common goal.

Take a walk together to look for examples. Your child might point out ants carrying off breadcrumbs together or geese flying in formation overhead. Then, compare animal and human group behaviors like these:

- An elephant herd surrounds its babies to guard them from predators. Ask your youngster how parents protect their children (hold their hands when crossing a street).
- If a goose gets wounded, others in the flock stay to help until it can fly again. Have your child think about what happens when she is sick (a parent stays home with her).

Division talk

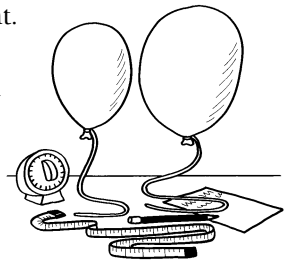
Your youngster can speak the language of division while playing these games.

Discard it! Using a deck of cards (ace = 1, face cards removed), deal each player four cards, and stack the rest. Take turns drawing a card. Look at it and at the cards in your hand for a pair of numbers that evenly divides. *Example:* Draw a 2, and pair it with a 4. Discard those cards, and say the division sentence (4 ÷ 2 = 2). The winner is the first one to get rid of all her cards.

Form an equation. Have your child divide a piece of paper into three columns. In the left column, she lists 10 common *products* (the result when two numbers are multiplied together), such as 18, 64, and 35. In the other two columns, she should randomly write 1–10. Finally, have her put ÷ between the first two columns and = between the second two columns. Moving from left to right, take turns crossing off a number in any row to create a division equation. For instance, cross off 24, 4, 6 to make 24 ÷ 4 = 6. Play until no options are left—the last one to find a division problem wins.

SCIENCE LAB Shrinking balloon

Something surprising happens when gases, like helium in a balloon, cool down. Let your child find out what with this experiment.



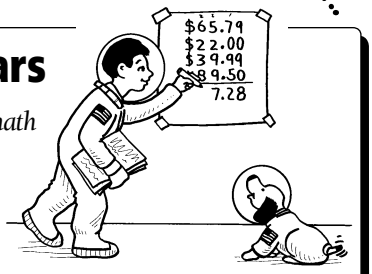
You'll need: 2 helium-filled balloons, measuring tape, pencil, paper, freezer, timer

Here's how: Ask your youngster to measure the *circumference* (distance around) of each balloon and record the numbers. Have him put one balloon in the freezer for 30 minutes. When the timer rings, he should measure both circumferences again.

What happens? The circumference of the "freezer" balloon will *contract*—or get smaller. The circumference of the other balloon won't change.

Why? The molecules in helium move rapidly, spreading out and taking up a lot of space. When the balloon is put in the freezer, the molecules get colder and slow down. This means they stay closer together and don't need as much space, so the balloon shrinks.

Q & A A (decimal) mission to Mars



Q: *My son is starting to learn about decimals in math class. What's a fun way I can help him practice?*

A: Explain that when you buy something and get change, you're working with decimals. That's because a dollar represents the whole number (1.00), and coins represent parts of the whole: A quarter is 0.25, a dime is 0.10, a nickel is 0.05, and a penny is 0.01.

Now let him gather a few sales flyers or catalogs and tally up items he would need for a "mission to Mars." He might list a heavy coat ($65.79) because it's so cold on Mars, goggles ($22.00) to help him see in the dust storms, hiking boots ($39.99) to climb one of the highest mountains in the solar system, and a generator so he'll have power ($489.50). Remind him to line up all the prices with the decimals in the same spot. How much will his packing list cost? ($617.28)

MATH CORNER Stick with tape diagrams

Here's a great strategy your child could use for solving algebra word problems: Make a tape diagram. It's a rectangle (resembling a piece of tape) she can draw and fill in with information from the problem. For example:

- You might say, "On Monday, I used 3 pieces of paper. On Tuesday, I used 2 more. If I started with 12 sheets of paper, how many were left over?" She can draw a tape diagram like this:

3	2	*x*

12

Then, she would add 3 + 2 = 5 and subtract 12 – 5 = 7. The diagram makes it easy to understand that *x* = 7.

- Your youngster may say, "I want to give 6 pencils to each of my 7 friends. How many pencils will I need?"

6	6	6	6	6	6	6

x

It's clear from the tape diagram that she needs to multiply 6 x 7 to get the answer (*x* = 42).

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
540-636-4280 • rfecustomer@wolterskluwer.com
www.rfeonline.com