Intermediate Edition

Math+Science Connection

Building Understanding and Excitement for Children

May 2018

Klamath Falls City Schools
Title I

INFO BITS

Telephone numbers

Let your child use the phone for something other than talking. Give him math challenges, such as adding or multiplying each row of numbers on the keypad (horizontal, vertical, diagonal) to find the largest sum or product. Or ask him to add all the numbers to find the total.

Get your heart pumping

How does exercise affect your youngster's heart rate? Show her how to take her pulse by placing two fingers on the inside of her wrist, setting a timer for 1 minute, and counting the beats. Now let her do jumping jacks for 1 minute and check her pulse again. Her heart beats faster when she exercises—that's because it's pumping more oxygen-rich blood to her muscles.

Book picks

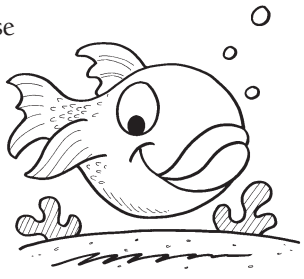
Hotel Infinity is fully booked, but there's always room for more. Read *The Cat in Numberland* (Ivar Ekeland) for a clever introduction to the concept of infinity.

Poetry combines with geology in *Earth Verse: Haiku from the Ground Up* (Sally M. Walker). Your child can learn about magma, volcanoes, minerals, and more.

Just for fun

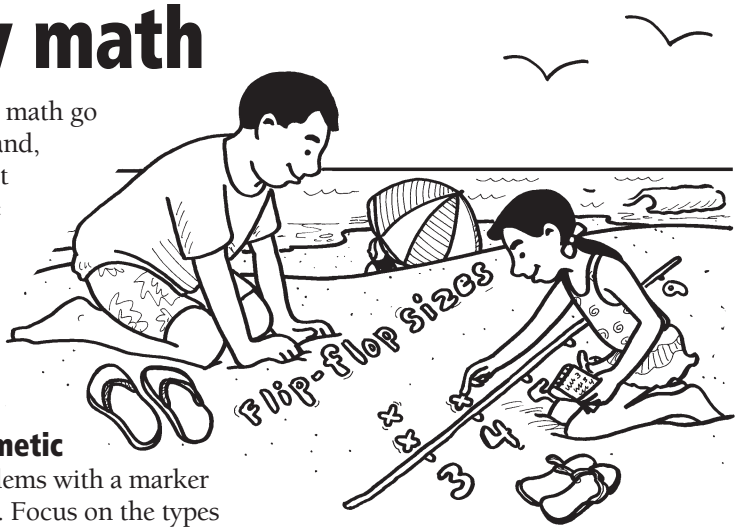
Q: Why do fish swim in salt water?

A: Because pepper makes them sneeze!



Beachy math

Summer fun and math go together like sun, sand, and water! Head out to the backyard, the beach, or the playground, and use these activities to help your child keep up her math skills.



Beach ball arithmetic

Write math problems with a marker all over a beach ball. Focus on the types of problems your youngster worked on in school this year, such as adding three numbers (8 + 9 + 6) or subtracting decimals (3.96 – 1.47). Then, toss the ball back and forth. When you catch it, solve the problem closest to your right forefinger.

Outdoor concert

Invite your child to perform a summer concert. First, have her line up 8 same-size glasses. She should measure $\frac{1}{8}$ cup of water into the first glass, and an additional $\frac{1}{8}$ cup water into each glass that follows ($\frac{1}{4}$ cup, $\frac{3}{8}$ cup, and so on). What does she hear when she taps each glass with a spoon? The amount of water determines the *pitch*—how high or low the sound is. The more water, the lower the pitch.

Line plot in the sand

What size flip-flop is most common among your youngster's friends and family? Have her take a survey and show her data with a line plot. Let her make a line in a sandbox or on the beach and add tick marks labeled with the shoe sizes reported. Above each mark, she should draw an X for each person who wears that size (say, 2 Xs above 3 if 2 people wear size 3 flip-flops).

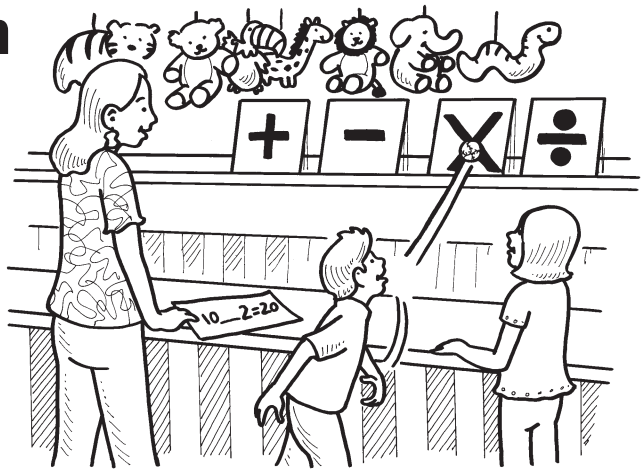
Science field trips

Your town is full of scientific outings for your family to enjoy. Here are some to consider.

- **Zoo.** Have your youngster read signs to learn facts about where each animal came from, its diet, and how it defends itself from predators.
- **Recycling center.** Call your local facility to ask when they give tours. Your child could see machines that sort and clean recyclables and hear how reducing waste helps the earth.
- **Botanical garden.** Your youngster can identify plants and discover which ones are native to your area. He might also find out about plant life cycles, how plants are pollinated, and which ones butterflies prefer.

The right operation for the job

Multiply, divide, add, or subtract—what should your youngster do to solve the problem? Use these ideas to help him pick the correct operation.



Which sign? On separate sticky notes, have your child write these math symbols: +, –, x, and ÷. Now take turns giving each other problems on a sheet of paper, leaving blanks for the operators. *Example:* 10 __ 2 = 20. Your youngster could think, "What should I do with 10 and 2 to get 20?" (*Answer:* He would multiply, so he should put the "x" sticky note in the blank.)

Which numbers? Secretly choose two single-digit numbers (say, 7 and 9), and add, subtract, and multiply them. Tell your child the three answers: "The sum is 16, the difference is 2, and the product is 63." Can he figure out your two numbers? He'll need to try adding, subtracting, and multiplying different numbers to determine which ones equal the answers given. Next, he can pick two numbers for you.

PARENT TO PARENT Let's time ourselves

The other day my daughters were arguing—again—over whose turn it was to use the computer. I mentioned this while chatting with my neighbor, and she had a solution.

Since she's a middle school math teacher, she's always looking for ways children can work on math skills. She said figuring out a fair way to take turns could help my girls practice addition and "time sense."

My kids and I discussed how long they could use the computer each day, how long each turn should be, and what time they would start. To bump up the math practice, my neighbor suggested using times and numbers that are "offbeat," like starting at 4:19 and having 16-minute turns. The turn-taking is going pretty well so far, and they're definitely getting to know the clock better!

OUR PURPOSE

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

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MATH CORNER How big is a watermelon?

A sweet, juicy watermelon makes a delicious summer treat—as well as a great math tool.

1. Weight. Have your child estimate how many pounds the watermelon weighs. Then, let him weigh himself on a bathroom scale, with and then without the watermelon. The difference is the watermelon's weight. If he weighs 96 pounds with the fruit and 80 pounds without, he would subtract 96 – 80 = 16, so the watermelon weighs 16 pounds.

2. Circumference. Next, your youngster could estimate the circumference, or distance around, the widest part of the watermelon. He can use a measuring tape to find the actual circumference and compare it to his estimate.

SCIENCE LAB Don't pop the balloon!

Your child can amaze friends and family with this balloon experiment.

You'll need: two balloons, straight pin, clear tape

Here's how: Help your youngster blow up both balloons and knot them. Then, she should find the darkened circle on the top of one balloon and stick the pin into it. Now, have her place a square of tape in the same spot on the second balloon—and stick the pin through the tape and into the balloon.

What happens? The first balloon pops, but the second one doesn't. *Note:* If your child removes the pin from the second balloon, it will slowly deflate.

Why? A rubber balloon is made of stretchy molecules called *polymers* that contain many tiny links. The pin in the first balloon breaks the links, and all the air suddenly rushes out. But the tape on the second balloon reinforces the links so they can't stretch enough to break. When the pin is removed, the air leaks out of the tiny hole it made.