Intermediate Edition

Math+Science Connection

Building Understanding and Excitement for Children

March 2019

Sabold Elementary School Title I
Parent Resource

INFO BITS

Prime detectives

A prime number is only divisible by 1 and itself. How many can you and your youngster spot when you're out together? You might see a sign for Route 29 or pass exit 11 on the highway. Let her list the numbers on a notepad—then come up with more primes on her own.

Be a citizen scientist

Does your child know that scientists sometimes rely on everyday citizens to help them gather data? Enter your zip code at *scistarter.com* to find citizen-science projects your family might participate in. Maybe you'll take and upload photos of plants growing alongside trails or report bumblebee sightings.

Book picks

With whimsical rhymes and illustrations, *A Fraction's Goal—Parts of a Whole* (Brian P. Cleary) uses strawberry plants, soccer players, and other familiar examples to explain fractions.

Make a tornado in a bottle or a CD hovercraft with the experiments in *Awesome Science Experiments for Kids: 100+ Fun STEAM Projects & Why They Work!* (Crystal Chatterton).

Just for fun

Q: You throw me out when you need me. You bring me back when you don't. What am I?

A: An anchor.

Addition: Beyond 2 + 2

Now that your youngster has mastered basic addition, encourage him to explore it in more complex ways. Try these activities that help him think flexibly about addition.

Add or multiply?

Baking cookies? Let your child see if there will be enough for everyone! Say there are 4 rows of 3 cookies on the baking sheet. Would he add 3 + 3 + 3 + 3 or multiply 3 x 4 to get 12?

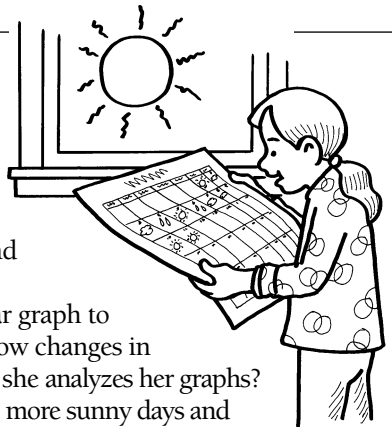
Help him think about multiplication as a shortcut for repeated addition. Get paper and pencils, and race to solve problems like 5 x 31 or 3 x 89. The catch? One of you multiplies while the other adds, switching roles for each problem. He'll see that you get the same answer—but multiplication is usually faster and easier.

Break it up

Have your youngster take bigger numbers apart to solve addition problems in his head. For 72 + 14, he could break 72 into 70 + 2 and 14 into 10 + 4. He'll get four numbers that are easy to add mentally (70 + 10 + 2 + 4 = 86).

Play this dice game for practice. Take turns rolling four dice and using the numbers to form a double-digit addition problem. Say you roll 3, 5, 5, and 6. Make 35 + 56, then take the numbers apart and solve (30 + 50 + 5 + 6 = 91). Your answer is your score. Keep adding each new roll to your total. The player with the highest score after five rounds wins.

Weather watch



As winter turns to spring, what weather patterns will your child discover? Encourage her to observe, record, and analyze the March weather with this idea.

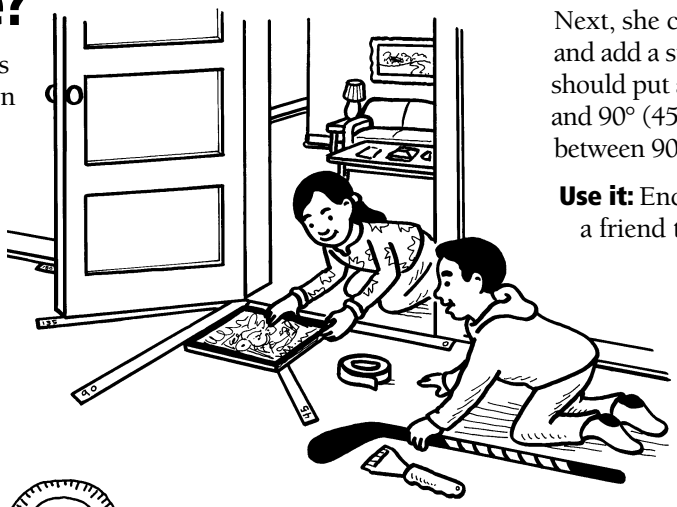
First, help her make a calendar page for the month. Each day, she can draw a symbol to match the weather (sun, cloud, raindrop) and record the high temperature.

At the end of each week, she could make a bar graph to compare types of weather and a line graph to show changes in temperature. What trends does she notice when she analyzes her graphs? For example, she'll probably observe that there are more sunny days and higher temperatures as it gets closer to spring.

What's your angle?

This handy "doorway protractor" lets your youngster measure angles found on household objects. Here's how.

Make a protractor: Ask your child to lay a strip of masking tape under a closed door and label it 0°. Then, have her open the door to form a right angle (an "L") with the wall—that's where she'll place a strip labeled 90°. Next, she can open the door all the way and add a strip labeled 180°. Finally, she should put a strip halfway between 0° and 90° (45°) and another halfway between 90° and 180° (135°).



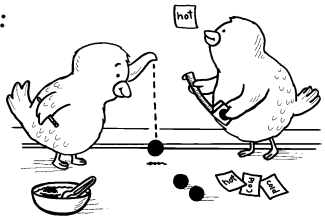
Use it: Encourage your youngster and a friend to collect small objects with different-size angles (book, snow scraper, hockey stick). Now they should estimate an angle on each item and line it up with the 0° tape to check their estimates. For instance, a book will turn out to have 90° angles at the corners.

SCIENCE LAB

Hot and cold bouncy balls

Which bounces higher—a hot bouncy ball or a cold one? This experiment will give your child the answer.

You'll need: four same-size bouncy balls, bowl, water, microwave, tongs, pencil, sticky notes, measuring tape



Here's how: Have your youngster put two balls in the freezer for 1 hour. You can heat a bowl of water in the microwave for 2 minutes, put the other two balls in the hot water for 5 minutes, and remove them with tongs. Now let your child put a sticky note on a wall, as high as he can reach. He should hold each ball at that height, one at a time, and drop it. Use a sticky note to mark the spot on the wall where each ball bounces. Label it "hot" or "cold," and ask him to measure the height of each note.

What happens? The hot balls will bounce higher than the cold ones.

Why? Molecules move faster when they're heated. The fast-moving molecules in the hot balls give them energy, so when they hit the ground, they bounce back higher.

Q & A

Capture-the-flag coding

Q: *I hear a lot about coding these days. How can I help my son try it when I have no experience with programming computers myself?*

A: Coding is all about using clear, logical step-by-step instructions to accomplish a task. Helping your son with it is easier than you think—and you don't even need to start with a computer. Try this version of Capture the Flag as an "unplugged" introduction to coding.

Hide a "flag" (washcloth, dish towel) in one room. Have your child start in another room, and give him spoken directions to find it. Like a computer, he can only move exactly as you direct him. Be specific: "Move forward 10 steps." "Turn right." "Move forward 2 steps." When he reaches the flag, swap roles, and let him "code."

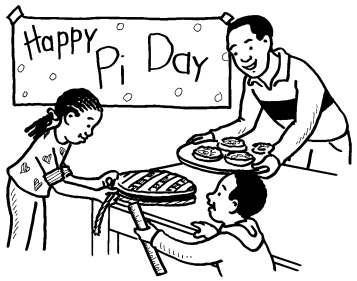
Now it's time for him to try coding on a computer! Visit a website like *code.org* or *codecademy.com* to get him started.

MATH CORNER

A Pi Day party

March 14 (3/14) is Pi Day! That's because 3, 1, and 4 are the first three digits of Pi, a number whose digits never repeat and never end. Your youngster can discover Pi by throwing a family party.

Together, plan a menu with round foods—maybe English muffin pizzas, carrot "coins," and apple pie. Also, choose games with circles (ring toss, Twister, hula hoop contest).



As you eat and play, have your child use yarn to find the *circumference* (distance around) of each circle, then measure its *diameter* (distance across) with her ruler. For each circle, she should divide the circumference by the diameter. What does she notice?

She'll discover what mathematicians figured out long ago: Regardless of a circle's size, its circumference divided by its diameter is approximately 3.14. For example, say a 30.5-cm piece of yarn fits around her pizza, and its diameter measures 9.7 cm (30.5 ÷ 9.7 = 3.14).

OUR PURPOSE

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

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