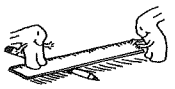
Intermediate Edition

Math+Science Connection

Building Understanding and Excitement for Children

February 2013

Sweetbriar Elementary School



INFO BITS

Even and odd

Pose addition problems with two even numbers, two odd numbers, or one odd and one even number. *Examples:* 10 + 12, 5 + 9, 17 + 18. Have your youngster record the equations. What does she notice? (The sum of two even or two odd numbers is even, and the sum of an even and odd number is odd.) Why does she think those rules work?

Air pressure

Can your child move a stack of books with his breath? Here's how. Put a plastic bag on a table, and stack two or three books on top. Tell him to make the bag's opening as small as possible and blow into it. Eventually, when he has blown enough air into the bag, the books will rise—supported by the compressed air trapped in the bag.

Web picks

Visit the math arcade or play sports-themed math games like soccer shootout, math baseball, and power football—all at *funbrain.com.*

At *tryscience.org,* your child can go on a virtual field trip to a science center, explore engineering, watch an experiment about oil slicks, and more.

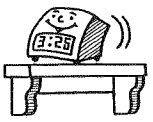
Worth quoting

"The human mind has never invented a labor-saving machine equal to algebra." *Anonymous*

Just for fun

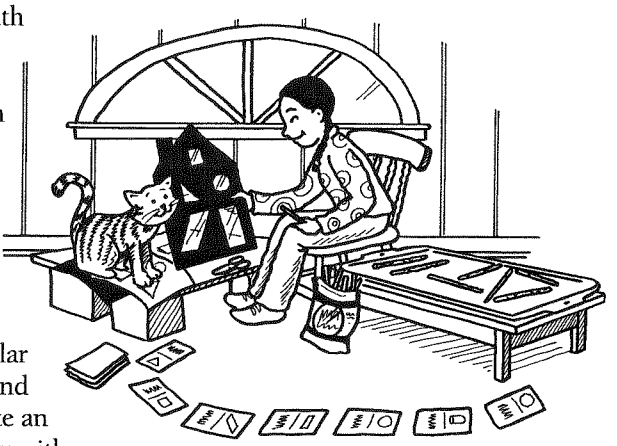
Q: What did the baby digital clock say to the mother analog clock?

A: "Look, Mom! No hands!"



Hands-on geometry

Let your child have her math and eat it, too. Then, she can create a geometry craft and enjoy a fast-paced game. With these ideas, she'll have fun turning snack time and playtime into geometry time!



Lines and angles

Give her pretzel rods or licorice sticks, and ask her to make parallel and perpendicular lines or to form acute, right, and obtuse angles. Or let her create an illustrated geometry dictionary with construction paper and toothpicks. On each page, she can glue toothpicks into geometric figures (parallelogram, square). Then, she could label them and staple the pages together.

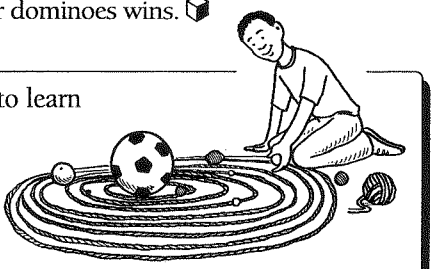
Polygon house

Suggest that your youngster cut a piece of black construction paper into the shape of a house. She could draw and cut out various geometric shapes (right triangle, rhombus). Let her tape colored tissue paper or cellophane wrap over each cutout. When she flips the paper over, she'll have a stained-glass house of polygons. *Tip:* She can use a silver or gold marker to label each shape.

Geometry dominoes

Brainstorm a list of 10 geometry terms (quadrilateral, line of symmetry). Get 20 index cards, and draw a line down the center of each to make dominoes. Write a term on half of a card, and illustrate it on half of a different card. To play, deal five cards to each person, put the rest facedown, and flip over the top card. Take turns trying to line up the dominoes, matching terms to pictures (if you can't, take a new card). The first player to use all her dominoes wins.

Planetary size



Making a model solar system is a fun way to learn about the relative sizes of the planets.

First, have your child look at pictures of our solar system online or in library books. Then, help him find household objects to use for his version.

For instance, he might place a soccer ball on the floor as the sun. He could use yarn to make eight ovals around the sun—for the *elliptical* paths the planets follow—and put each planet in its "orbit." He might use a small bead for Mercury, marbles for Venus and Earth, a larger bead for Mars, a grapefruit for Jupiter, an orange for Saturn, and kiwis for Uranus and Neptune.

Note: Make sure your youngster realizes he is not building a solar system to scale—to do that would require much more space than he has at home!

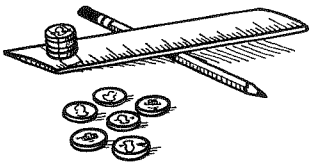
What's today's date?

Every new day brings new math problems! Just have your youngster read the date on the calendar and try activities like these:

- See how many ways he can make the number in today's date. If it's the 18th, he might come up with 6 x 3, 22 – 4, and 36 ÷ 2.
- Have him make equations using all the numbers in the date. For Feb. 6, 2013, he could write the digits 2, 6, 2, 0, 1, 3 and form equations like 13 x 2 = 26. Or ask him to write the date in numerical form (2/6/13) and find the average of the three numbers (7).
- Suggest that he make up word problems. On Feb. 2, 2013, he might say, "I'm having 2 friends over after school. They'll be here for 2 hours. Each of us can decide what to do for $\frac{1}{3}$ of the time. How much time do we each get for our activity?" *Answer:* 40 minutes, because 120 minutes ÷ 3 = 40 minutes, or $\frac{2}{3}$ of an hour.

SCIENCE LAB Lifting with a lever

Experiment with a lever to find out about simple machines—devices that help us do more work with less force.



You'll need: ruler, pencil, pennies, tape

Here's how: Have your child tape pennies to one end of the ruler. Then, she can lay the pencil on a table and balance the ruler on top. The pencil is the *fulcrum,* and the pennies are the *load.* Now, tell her to push down on the end without the pennies. Does the end with the pennies lift easily? What happens if she moves the pencil closer to her fingers or closer to the pennies?

What happens? The nearer the pencil is to the pennies, the easier it is to lift the end with the pennies.

Why? A lever is most efficient when the fulcrum is closest to the load.

Idea: Ask your youngster if she can think of a lever found on a playground (a seesaw). Together, think of other levers we use in everyday life (a bottle opener, a hammer to pull out a nail).

OUR PURPOSE

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

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PARENT TO PARENT Our own math club

When my teenage daughter and her friends decided to start a book club, it gave me an idea for my younger daughter. Since Christina likes math, I thought she could start a math club with her friends. She was excited about the idea and immediately called her two best friends.

The three girls met here last week. They decided they would do their homework together in "Math Club." And I heard Julie say, "Let's do what Mrs. Thomson said in class—when we get the answer, we have to prove to each other why it's right."

It seems like the girls have some great plans for their weekly meetings. They're going to play games involving math, such as Yahtzee, Uno, Set, and Krypto, and they want to have a Sudoko competition. Plus, they're talking about filming math videos explaining concepts like fractions or division to little kids. I can't wait to see what they come up with!

MATH CORNER Decimal games

Play these games to give your youngster practice with decimals.

Pick and color. Have each player divide a sheet of paper into a 10 x 10 grid representing the number 1. Each square will equal $\frac{1}{100}$, or 0.01 of the whole. On separate slips of paper, write various decimals in tenths and hundreds (0.03, 0.75), and stack the slips facedown. Take turns choosing a slip and coloring in the corresponding number of squares (for example, 0.1 is $\frac{1}{10}$, or $\frac{10}{100}$, so you would color 10 squares). Return the slip to the bottom of the stack. Whoever reaches 1 first—by completely filling in her grid—wins.

Throw and score. Shuffle a deck of cards (10s and face cards removed), and label three containers 0.02, 0.2, and 2. Place the containers a few feet away, and take turns trying to toss in 3 cards. When you make a shot, multiply the number on the card by the number on the container (*example:* If a 4 lands in the 0.2 container, score 0.8 points). The high scorer after 5 rounds wins. Change the values on the containers, and play again.