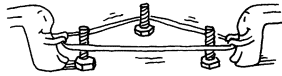


Math+Science Connection

Building Understanding and Excitement for Children

September 2016

Cape Central Middle School
Mr. Rex Crosnoe, Principal



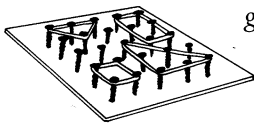
INFO BITS

Piece of the pie

Fractions and pizza go together like mozzarella and pepperoni. When you eat pizza, ask your child what fraction 2 slices would be (if there are 8 slices, 2 slices = $\frac{2}{8}$, or $\frac{1}{4}$). But what about the toppings? If there are 48 pepperoni pieces on the pizza and she eats 6 pieces of pepperoni, what fraction did she have? ($\frac{6}{48}$, or $\frac{1}{8}$ of the pepperoni)

Engineer a geoboard

See what your youngster comes up with when you suggest he build a geoboard. He'll need a platform (cardboard, wood) and something for the pegs (pushpins, screws). He can decide how big to make his grid, perhaps 5 x 5. When he's done, he'll enjoy using rubber bands to make shapes and designs on his own geoboard.



Book picks

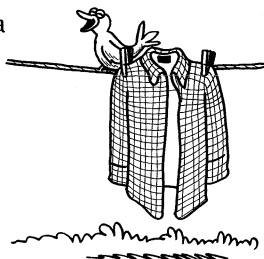
■ *Amazing Minecraft Math: Cool Math Activity Book for Minecrafters* (Osie Publishing) is a color-by-number book. Solve a math problem to know what color to make your favorite Minecraft characters.

■ Walk with your child through galleries of fish, mammals, birds, and more in *Animalium: Welcome to the Museum* (Katie Scott and Jenny Broom).

Just for fun

Q: What has a neck but no head and two arms but no hands?

A: A shirt.



Multiplication games

What better way to practice multiplication than with games your child will want to play again and again? Here are two you can try today—and tomorrow!



Face off

Materials: deck of cards (face cards removed, ace = 1)

Deal all the cards evenly. Then, each player turns over two cards and multiplies the numbers together. Whoever has the highest *product* (answer) collects all the cards. If there's a tie, players turn over their next two cards, and the winner takes all. Keep playing until one person collects the entire deck—he's the winner. *Note:* If a player has only one card left, he can multiply it by itself (9×9 or 1×1).

Multiply to 1,000

Materials: dominos, 10 scraps of paper numbered 0–9, paper, pencil

Spread the dominoes out facedown. Shuffle and stack the papers. On each turn, a player picks a domino and uses it to form the largest two-digit number possible (a domino with 3 dots and 6 dots would make 63). Then, the player draws a slip of paper and multiplies by that number to get his score. For example, if he draws 4, he would multiply 63×4 for a score of 252. On each round, add your score to your previous one. Whoever reaches 1,000 first wins the game. 🎲

Going underground

There's a whole world of activity just under the grass that your youngster can explore. Let her turn a shovelful of dirt over to see what it uncovers, such as:

● **Earthworms.** Worms help to break down leaves and other material, and they move nutrients and minerals around for healthy soil. Can your child find one and identify its head and tail? (*Hint:* Worms usually move head first.)

● **Roots.** Ask her to point to roots in the dirt and follow them to their source. A long single root might be a dandelion, branching roots may be clover, and a thick, strong root could belong to a tree. 🌱



The best graph for the job

Graphs help your youngster visualize and understand data. Use this activity to show her how we use different types for different purposes.

Together, find a bunch of graphs from newspapers and magazines. Cut them out, and snip off the headlines and labels. Mix them all up. Now, ask your child to put them back together. As she matches the headings and labels to the graph, she'll learn



- ✓ A **line graph** is best for showing data over time, like daytime temperatures for a week.
- ✓ A **bar graph** is good for comparisons, such as the popularity of various types of music.
- ✓ A **pie chart** (or circle graph) shows parts of a whole, as with the age ranges of people who use the Internet.

about which types of graphs are used for different kinds of data.

When she finishes, take turns pointing out something you learned from the graphs. Your youngster might notice that the temperature suddenly dropped on Thursday, more people listen to pop music than rock music, or that young adults use the Internet more than any other age group does.

She'll be amazed at the information you can learn from a graph, especially if you use the right one for the job! 📦

SCIENCE LAB See the (surface) tension

Your youngster can combine a little water and soap to have a lot of fun with *surface tension*.

You'll need: eyedropper, cup of water, nickel, liquid soap, towel



Here's how: Let your child use the eyedropper (or drip water from his fingertip) to slowly put water on the nickel, counting how many drops it holds before the water washes over the edge. Have him dry off the nickel, add a few drops of soap to the water, and repeat the experiment.

What happens? The nickel will hold a surprising amount of regular water, but not nearly as much soapy water.

Why? Water molecules are tightly stuck together, creating what's called *surface tension*. That's what keeps the water from flowing over. Soap breaks apart the water molecule bonds, decreasing the surface tension.

Real-world fact: This is why soap helps clean dishes. It breaks apart the water molecules so they mix with grease and wash it off dishes. 📦



MATH CORNER

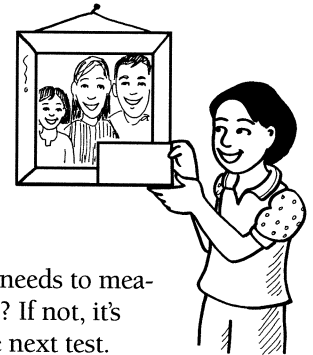
Squared away

How can you tell when a rectangle is a square? Challenge your child to find objects she thinks are squares—perhaps picture frames, cheese slices, or sticky notes—and then do these tests to see if they actually are.

Test 1: Since squares have four equal-length sides, she needs to measure all the sides with a ruler. Are they the same length? If not, it's not a square. If they *are* the same, she'll move on to the next test.

Test 2: A square's four angles are all right angles. Suggest she use the corner of an index card for comparison. Do all the angles of the object match the corners of the card? If they do...she's found a square!

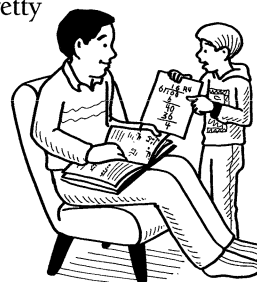
Idea: Ask your child if she knows what the shape is if all four sides are equal but the angles are not all right angles. **Answer:** a rhombus. 📦



Q & A Yes, I can!

Q: My son thinks he can't do math because he makes mistakes. How can I show him that he can succeed in math?

A: Here's a simple idea that's pretty effective: Whenever your son says things like, "I can't..." or "I don't understand..." add the word "YET." You can explain that that is what learning is all about—adding knowledge we don't have "yet" as well as learning from mistakes we make.



Then, try this. Have your youngster work one of his math homework problems out loud for you. Going step by step, he's likely to find where he got stuck. You might be able to ask him questions that will steer him toward the answer, or he could ask his teacher for help the next day.

Also, point out what he *did* understand, even if it was only saying the problem in his own words or doing the first step. 📦

OUR PURPOSE

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

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