

Math+Science Connection

Intermediate Edition

Building Understanding and Excitement for Children

December 2016

District School Board of Pasco County

Title I



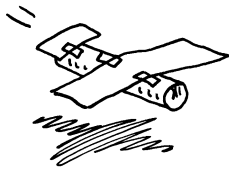
INFO BITS

Be a "liter" bug

If 5 milliliters is the amount of liquid that could fit in a teaspoon, how many milliliters does your child think are in 4 oz. of water? Have him make a prediction. Then, he could use a metric measuring cup to check. *Idea:* Let him practice multiplication by figuring how many milliliters would be in 8 or 16 oz. of water.

Up in the air

Challenge your youngster to create a flying machine that will stay airborne for at least three seconds. She could use paper, straws, toilet paper tubes, tape, or other household materials to make an airplane. Or she might design a helicopter, a hot-air balloon, or other flights of fancy all her own.



Web picks

At math-play.com/index.html, your child can click on his grade level to play Multiplication Jeopardy or practice division with Math Magician.

Make fossils or create a tiny tornado with the exciting experiments at scholastic.com/magicschoolbus/games/experiments/.

Just for fun

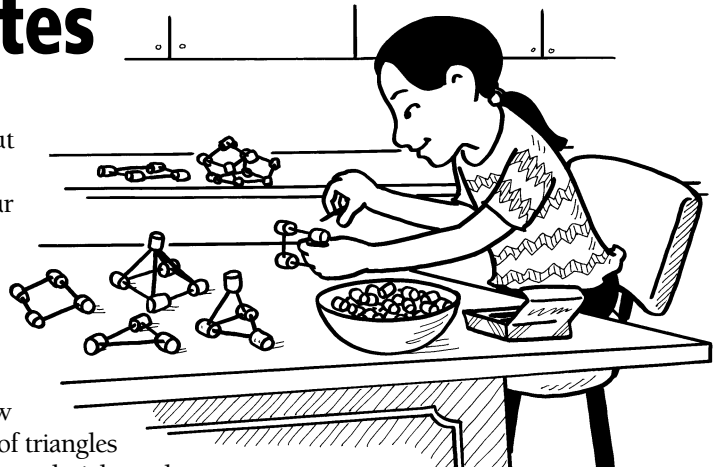
Q: Why couldn't the astronaut find a hotel room on the moon?

A: The moon was full!



Shape up: Comparing attributes

Geometric shapes may look different but share similar traits. With these ideas, your youngster can build 2-D and 3-D shapes and explore their attributes.



Triangles

Ask your child how many different kinds of triangles she could design with toothpicks and gummy bears or mini marshmallows. She might use 3 toothpicks for one side, 4 for another, and 6 for the last side—that's a *scalene triangle* with three different-length sides and angles. Or if she leaves all sides the same length, that's an *equilateral triangle*. Can she make an *isosceles triangle* (where just two sides are equal)?

Quadrilaterals

Suggest that your youngster form a rectangle, a square, and a trapezoid. What do they have in common? (They

all have four sides.) Have her point out parallel sides or equal-length sides. For instance, a square has four equal sides and two sets of parallel sides.

Solid shapes

Now your child might try her hand at 3-D shapes, such as a cube or a triangular prism. Encourage her to count the number of faces, edges, and vertices for each one. For instance, a cube has 6 faces, 12 edges, and 8 vertices. (*Note:* A face is the flat side, the edge is where two faces meet, and a vertex is where three or more faces meet.)

Good vibrations

Making homemade instruments is a fun way to play with the vibrations that create sounds. Suggest your child try these—and figure out what is vibrating.

● **Drum.** Bang a metal can with a spoon (the spoon vibrates).

● **Guitar.** Stretch rubber bands around a box to pluck (the rubber bands vibrate).

● **Flute.** Blow across the narrow opening of a glass bottle (the air inside vibrates).

Does your youngster know that his voice is an instrument, too? Have him place his fingertips on his throat and then recite his vowels, cough, growl, and say his name in a whisper. How do the vibrations vary?



Round up, round down

Rounding is useful in math class to estimate answers and check homework—and in real life to estimate purchases or plan a budget. Let your child see how rounding works with these steps.

1. Have your youngster roll four dice and randomly arrange them into a four-digit number (say, 4,123). He should write the number on the left side of a sheet of paper.
2. Next to it, he rounds the number to the nearest thousand (4,000), hundred (4,100), and ten (4,120).
3. Now he rolls again to get a second number (say, 2,164). Your child rounds that number to each place value as well: 2,000, 2,200, and 2,160.



4. Let him add each column of rounded numbers to get three rounded totals:

$$4,000 + 2,000 = 6,000$$

$$4,100 + 2,200 = 6,300$$

$$4,120 + 2,160 = 6,280$$

5. Finally, he can add the two actual numbers: $4,123 + 2,164 = 6,287$. He'll see that with each rounding, he got closer to the real answer.

Hint: To remember whether to round up or down, he could underline the digit to the right of the place to be rounded: 0–4 rounds down, and 5–9 rounds up.

SCIENCE LAB

Warm gloves—or are they?

In cold weather, gloves keep your youngster's hands warm—not by magic, but by science. She can see why with this experiment.

You'll need: glove, thermometer (such as a meat or candy thermometer)

Here's how: Have your child put the thermometer inside the glove and take its temperature. Then, she should wear the glove for about 30 minutes. When she takes it off, let her check the temperature inside the glove again.



What happens? At first, the glove was around room temperature. After being on her hand, it warmed up, getting closer to body temperature of 98.6 degrees.

Why? Gloves alone do not produce heat. But people produce and give off heat. When your youngster puts on gloves, the heat is trapped and keeps her hands warm. That's a good reminder of why she should wear gloves when it's cold out!

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

Show me the fraction

My daughter Mollie has been working on fractions at school and wanted to practice at home. I came up with an appetizing way to feed her tummy *and* her brain.

First, I asked her to write various fractions on pieces of paper and put them in a bowl. She wrote these: $\frac{1}{3}$, $3\frac{1}{4}$, $\frac{4}{8}$, $5\frac{1}{2}$. Then, I offered her pretzels for a "fraction snack."

Mollie picked a fraction from the bowl, $3\frac{1}{4}$, and went to work. She put out 3 pretzels, then broke a fourth pretzel into 4 parts, and added one part to the 3 whole ones. Now she was ready to eat $3\frac{1}{4}$ pretzels!

Other days she has picked a fraction slip and made $\frac{1}{3}$ of an apple or $5\frac{1}{2}$ crackers with cheese. The extra "snack practice" has helped Mollie grasp the concept of fractions.



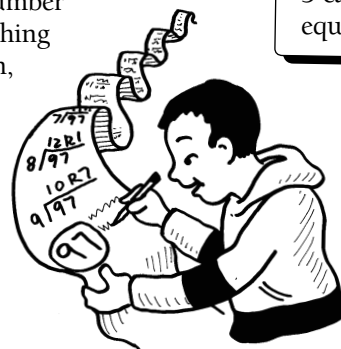
MATH CORNER

Rhymes for primes

Does your child know that prime numbers go into infinity? See how many he can find and remember by making up rhymes for each one.

Starting with 2, have him use scratch paper to check if each number could be divided by anything besides 1 and itself. Then, take turns coming up with funny rhymes like these for the ones that pass the test:

- *The prime number 2
Got stuck in the goo*
- *Up in a tree
Is prime number 3*



What's a prime?

Prime numbers are those whose only factors are 1 and the number itself. For instance, 3 is prime because only 1 and 3 can be multiplied together to equal it ($1 \times 3 = 3$).

Let your youngster write down the primes—and the rhymes. He might even want to turn them into a poster or a booklet. When he finds the next prime, it's time for another rhyme!