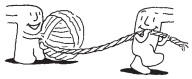
Intermediate Edition

Math+Science Connection

Building Understanding and Excitement for Children

March 2012

Holyoke Public Schools



INFO BITS

Try an "e"

Did you know that playing hangman can teach your child about probability? Have him list the alphabet on a sheet of paper. Then, take turns choosing a word and guessing letters. After each game, he can put a tally mark by the letters in the word. What does he find over time? *Hint:* E is the most used vowel, and T is the most common consonant.

Balancing act

Have your child stand sideways with one foot and one shoulder against a wall. Place a piece of paper between her shoulder and the wall, and ask her to hold it there. Can she lift her outside foot without dropping the paper? (*Answer:* No! To lift her foot, she has to move her body to stay balanced.)

Book picks

Moonshot: The Flight of Apollo 11 (Brian Floca) takes young readers through the amazing journey that landed the first humans on the moon.

For an entertaining look at math, with characters like the Counting Crew and the Graph Gang, try *Algebra & Geometry: Anything But Square!* (Dan Green).

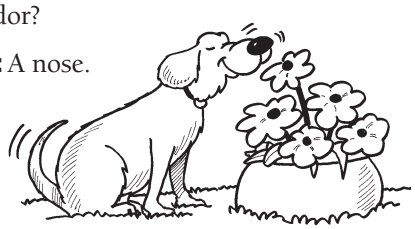
Worth quoting

"All the world is a laboratory to the inquiring mind." *Martin H. Fischer*

Just for fun

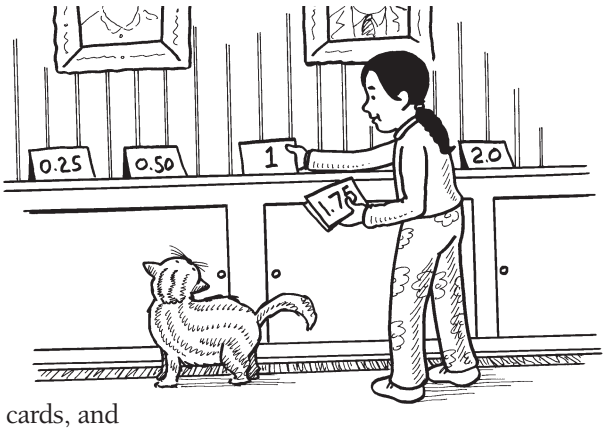
Q: What always smells but has no odor?

A: A nose.



Working with decimals

Decimals are a part of everyday life that children begin to learn about in the upper elementary grades. These ideas will let your youngster practice at home.



Put in order

Together, make a set of decimal cards, with one decimal per index card (*example:* 0.25, 0.5, 0.75, 1, 1.25, 1.5, 1.75). Shuffle the cards, and see how quickly your child can put them in order. Then, while she closes her eyes, lay them in order but leave out a few. Give her the missing cards, and have her put them where they go. Next, she can make a missing-number lineup for you to figure out.

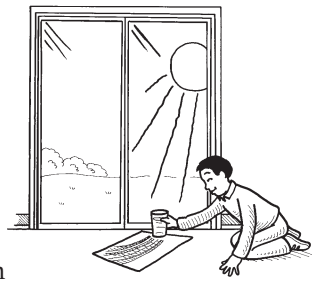
Round up or down

Give your youngster practice in rounding decimals to the nearest whole number. When you're eating out, have her round your bill to help you figure out the tip. For instance, if the check is $15.38, she would round it to $15. If it is $15.78, it would round to $16 (round down for 49 cents and below and up for 50 cents and above). *Idea*: Challenge her to use that number to determine the tip.

Add up prices

Hand a grocery circular to your child. Ask her to plan her favorite meal and figure out how much the ingredients would cost. She should stack the prices in a column, being sure to line up the decimal points. Aside from that, adding numbers with decimals is the same as adding any other numbers! *Note:* For numbers that are less than $1.00, it might help her to put a 0 in the dollar place (for 45 cents, write 0.45).

Make a rainbow



It's always exciting to see a rainbow in the sky. Let your youngster create one anytime with this activity.

Have him fill a glass with water, three-quarters full. Then, he should take the glass to a sunny window and hold it over a piece of white paper. As the sunlight passes through the water and *refracts* (bends), he'll see a rainbow appear on the paper.

In the sky, rainbows form when sunlight passes through raindrops. The sunlight separates into the seven colors of the rainbow: red, orange, yellow, green, blue, indigo, and violet. Can your child see all those colors in his rainbow?

Idea: Let him repeat the experiment with cooking oil. How are the results the same or different?

Celebrate Pi Day

March 14 is a great day to have a math party! Why? Because *pi* (the ratio of a circle's circumference to its diameter) is rounded to 3.14—and March 14 is 3-14. Let your family celebrate with a pizza pie dinner or apple pie dessert and these activities.

● Gather different-sized cylinders, such as an oatmeal canister, a soup can, and a tuna can. Have each person cut string to fit exactly around the circumference of the cylinder. Then, stretch that piece of string across the diameter (the circle on the top). Cut it into as many pieces as possible that are the length of the diameter. What do you find? (For each cylinder, you can cut 3 strings of equal size and have a little string left over—or about 3.14, or pi.)

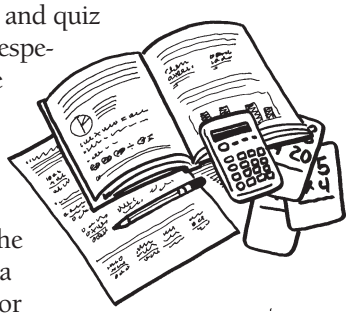
● Your youngster has probably learned that the digits in pi go on forever. Have him Google pi to find the beginning ones. Then, write a poem matching the number of syllables (or the number of letters) in each word to the digits in pi. How long can your family make your poem? *Example:* Use the first 5 digits (3.1415) to start a poem like this:

Together
A librarian
And mathematician…

Q & A Studying for math

Q: *My child says you can't really study for math tests. How should I respond?*

A: Studying for math tests is different than studying for other subjects, but it's just as important. Let her know that studying for math involves lots of hands-on practice. For instance, she should do problems from her textbook or from review worksheets. She can also rework homework and quiz problems, especially those she got wrong.



To check her answers, she might use a calculator or look in the back of her textbook or at graded homework or quizzes. Another idea is to find sample problems or tests online.

When tests cover math formulas, encourage your youngster to come up with ways to remember them. She might study with flash cards or turn the formulas into rap songs or rhymes.

MATH CORNER My math office

Do you turn your kitchen table into an office for paying bills? Let your youngster create his own math "office"—and he'll have a place to work on his growing skills.

Tools. Give him a plastic container or an empty shoebox for storing math supplies. He can fill it with pencils, markers, notepaper, graph paper, a ruler, a compass, a protractor, glue, "counters" (small objects) for solving problems, and a calculator.

Resources. Suggest that he staple together file folders (accordion-style) to make his own math reference library. On separate panels he could tape the times table, units of measurement, hundreds charts, or other reference sheets he brings home from school. When he's doing math homework, he'll have his materials in one handy place. Plus, he can stand the folders up to block out distractions.

SCIENCE LAB Wind resistance

When you see geese flying overhead, point out how they move in a V formation. Then, use this experiment to help your youngster see why.

You'll need: bike, a friend with a bike

Here's how: Have your child ride her bike with a friend riding in front of her and slightly to the side (the way two geese fly in V formation). Next, they should swap places. Ask your child what differences she notices.

What happens? Pedaling feels easier when someone is riding in front of you.

Why? The person in the back faces less wind resistance.

Tip: Ask your youngster to think about how this applies to geese (the goose in the front cuts the wind resistance for the rest of the flock). You can explain that geese work as a team. Since the lead goose has to work hardest, the birds take turns—as one gets tired, it drops back, and another one takes its place.

OUR PURPOSE

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

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