

Math+Science Connection

Beginning Edition

Building excitement and success for young children

March 2012

Holyoke Public Schools

TOOLS & TIDBITS



Help with repairs

When you're fixing or building things, let your child pitch in with the math. You could tell her how many picture hooks you need and let her count them out, for example. Or she could help you measure wood for a new picnic table or find the pieces that match the diagram when you're assembling a grill.

Sound waves

Help your youngster imagine how sound moves through the air. Let him fill a large bowl with water, dip in a finger, and watch what happens. (He'll see waves spreading out.) Explain that sound moves in waves, too, but they're invisible. He hears sounds when they travel from an object making noise until they reach his ear.

Book picks

▣ *12 Ways to Get to 11* (Eve Merriam) shows ways to combine numbers so they add up to 11. A colorful introduction to counting and addition.

▣ What do lizards use their tails for? How do chimps eat with their toes? Your child will learn fascinating animal facts in *What Do You Do With a Tail Like This?* (Steve Jenkins and Robin Page).

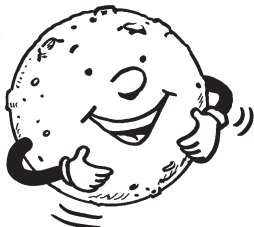
Worth quoting

"It's not what you look at that matters, it's what you see." *Henry David Thoreau*

Just for fun

Q: When is the moon heaviest?

A: When it's full.



All in the family

Your child knows that he's part of a family. But does he know that numbers can belong to families, too? Use these activities to help him learn about fact families.

Who's related?

Have your youngster pick two numbers between 0 and 9 (2, 3). Help him total them (5), and explain that those three numbers make a family. *Idea:* Let him use small objects like buttons to show the fact family for 2, 3, and 5 ($2 + 3 = 5$, $3 + 2 = 5$, $5 - 3 = 2$, $5 - 2 = 3$).


Who lives here?

Putting facts into their own house lets your child see all the "relatives." On construction paper, have him draw a house with a door, two windows upstairs, and two windows downstairs. He can cut out the windows and glue the house onto another piece of paper. Have him write the "address" (347) on the door. In the upstairs windows, he can put two addition



facts ($3 + 4 = 7$, $4 + 3 = 7$), and in the downstairs windows, two subtraction facts ($7 - 3 = 4$, $7 - 4 = 3$).


Who's on vacation?

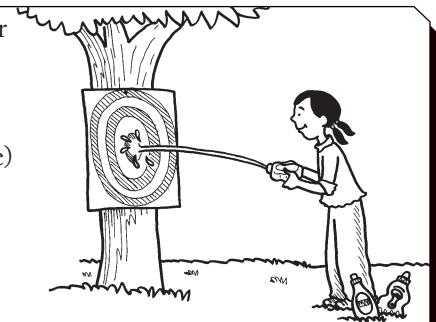
Play a missing-person game. Together, pick a set of related facts (2, 4, 6), write each number on a separate sticky note, and make separate sticky notes with math symbols (+, -, =). Put each note on a different stuffed animal, and have your youngster close his eyes while you hide one. Give him a problem ($2 + __ = 6$), and ask him who's missing. When he names the number (4), he gets to do the hiding. 

Squeeze and squirt

Predict...squeeze...squirt. Squirting water is a great way for your youngster to play with science.

Let her fill plastic squirt bottles (empty ketchup and mustard containers, for example) with water and close tightly. Go outside, and have her predict which bottle will make the water go farthest. Then, she can squirt each one to find out.

Next, ask your child to make a target by drawing a circle on cardboard. Have her use each squirt bottle to try to hit the target. She'll see that she has to adjust the pressure to squirt the water farther or closer. This will teach her about cause and effect (squeeze lightly and the water dribbles out, or squeeze hard and the water shoots out farther). 



Coin sense

What's round, comes in different sizes and colors, can help your child learn math skills, and is a valuable part of everyday life? Coins! Here are some ways you can acquaint your youngster with the coins she'll use throughout her life.

Be a collector. Give her a penny, nickel, dime, and quarter to start a coin collection. She could put each one in an envelope and label it with the coin's name and value. Or she might keep her coins in a craft box with compartments. Encourage her to examine each coin to find the year or other markings. *Note:* She can add to her collection with



coins from gifts, her allowance, or even the tooth fairy.

Make patterns. Give your child a handful of change, and ask her to make patterns. She might alternate penny, nickel, penny, nickel, or line up penny, penny, dime, nickel, penny, penny, dime, nickel. Ask her to tell you the pattern—and how much each coin is worth. *Idea:* Help her add up the total value of her pattern.

Play "In my pocket!" Put a few coins in your pocket and say, "I have 3 coins in my pocket. They are worth 12 cents. What are they?" (*Answer:* 1 dime and 2 pennies.) Then, your youngster can put coins in her pocket and ask you a question.



SCIENCE LAB

Make rain

Watching "rain" form in a jar will help your youngster understand why it rains outside.

Materials: hot water, ice cubes, clear jar with a metal lid

Here's how: Have your child put about an inch of hot tap water into the jar. Next, he should place the lid upside down on the jar and pile ice cubes on top. Let him observe the jar closely.



What happens? Water drops will begin falling from the top of the jar into the water at the bottom.

Why? As the hot water begins to evaporate, it turns into water vapor (a gas) and rises. When the vapor collides with the ice-cold lid, it cools. That makes it lose energy, slow down, and turn back into a liquid—as drops of water. This is the principle of *condensation*, which is what causes rainy days.

OUR PURPOSE

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

Resources for Educators,
a division of CCH Incorporated
128 N. Royal Avenue • Front Royal, VA 22630
540-636-4280 • rfeustomer@wolterskluwer.com
www.rfeonline.com
ISSN 1942-910X

Q & A

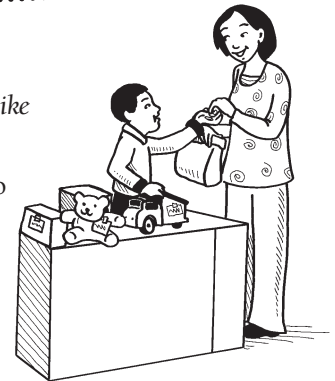
Playing or math?

Q: When I'm in my son's class at math time, it looks like they're playing. Are they really learning?

A: Yes! Using hands-on materials is one of the best ways to learn and practice math skills at this age. When your son plays with blocks, buttons, scales, and toys in the math center, he is getting real-life experience in counting, measuring, and learning how numbers relate to objects.

You can continue this kind of math learning at home by building math into your child's playtime. For instance, play "store" together. Have him put price tags on his toys, and take turns being the buyer and the cashier.

Encourage him to solve puzzles—he will be noticing shapes and practicing spatial skills. Or suggest that he use Legos to practice adding one more or taking one away. Also, play board games that involve math, such as keeping score, counting money, or advancing game tokens to match the roll of a die.



MATH CORNER

Pairing up

Do these gloves match? Learning to match up pairs will help your child notice *attributes*—characteristics like shape, size, or color. These activities are a fun way to practice:

- Have your youngster look in the mirror or at her pet to notice pairs. Then, she can draw a picture, using a different color crayon for each pair (eyes, hands, feet).

- Together, draw and cut out paper mittens with different colors or patterns on

each pair. Place them upside down, and play a matching game. Turn over two mittens at a time. If they match, keep them. If not, turn them back over. Continue playing until all the matches are found.

- Let your child match up socks when you're folding laundry. Or have a sock treasure hunt: hide socks for family members to find. When you're finished, have your child match them up and count by 2s to get the total.

