

# Math+Science Connection

Beginning Edition

Building excitement and success for young children

January 2012

Holyoke Public Schools



## TOOLS & TIDBITS

### Make a blueprint

Let your child map out her bedroom on a sheet of paper. She can draw the shape (square, rectangle) and mark the windows and doors. Then, have her add her bed, dresser, and other items. On another piece of paper, she might sketch out a way to redesign her room. As she draws and plans, she'll practice spatial relations skills.

### Experience nature

When it rains or snows, step outside together and let your youngster use her senses. She can *look* at the clouds, *smell* the air, *touch* the rain or snow, *listen* to the sounds, and even *taste* the drops or flakes. Go back inside and help her write a "senses poem." (Snow looks like \_\_\_\_\_. Snow feels like \_\_\_\_\_.)

### Book picks

Through poetry and pictures, children will practice finding patterns in *Busy Bugs: A Book About Patterns* (Jayne Harvey). A great way to build math skills in little ones who like bugs!

Share a story of seasons and life cycles through the eyes of two Native American girls, one from long ago and one from today. *When the Shad-bush Blooms* (Carla Messinger) is a beautiful look at the environment and family traditions.

### Worth quoting

"Wisdom begins in wonder."

Socrates

## Just for fun

**Q:** What follows a dog wherever it goes?

**A:** Its tail.



## Sorting things out

When Jason plays with toy trucks, he likes to separate them into groups by color. His friend Carl puts big trucks in one row and small trucks in another. Both of these children are *sorting*—a fun way to play and a good way to build math skills.

You can give your child a chance to practice sorting at home with these ideas.

### Matching game

Put out a pile of nuts, bolts, and washers. Have him tape one of each onto separate index cards. Then, he can sort the hardware by piling each type on its matching card. Or put a different coin (penny, nickel, dime, quarter) in each cup of an empty egg carton. Give him a handful of change to sort into the correct sections.

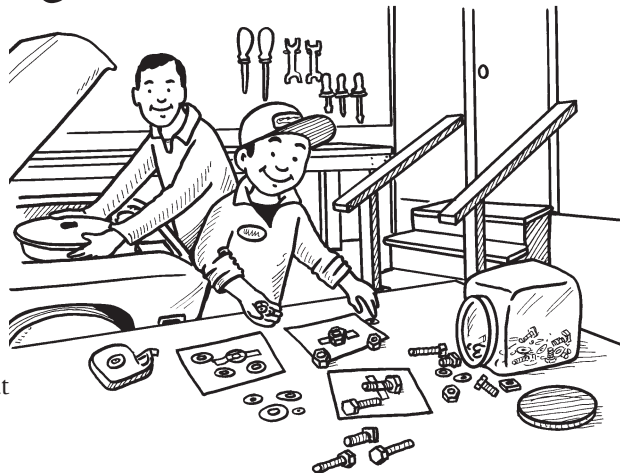
### Sorting plans

Help your youngster make a "sorting map" out of a large poster board or a white plastic tablecloth. He can draw six circles and use crayons or markers to make each

one a different color. Have him gather toy cars and "drive" each one onto the matching circle. Another idea is to let him decide how to sort something (things with metal vs. things without metal), and then you have to figure out his "sorting rule."

### Cleanup system

Build responsibility by combining sorting with cleanup time. Help your child label shelves or bins by drawing pictures or writing words (blocks, games) on mailing labels. Then, each day when he finishes playing, he can sort his toys into categories and put them where they belong. 🐛

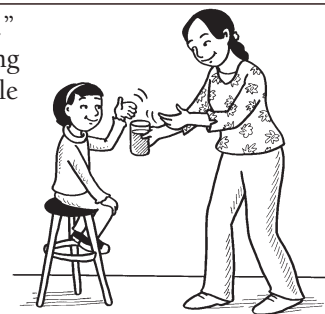


## Learn about "wafting"

Introduce your child to the technique of "wafting." It's a fun—and safe—way to smell substances during science experiments (and it's even a fun word for little ones to say).

To waft, she should hold an item about 8 inches from her face and wave her hand over it and toward her nose. She'll safely smell the material without directly inhaling it.

Let her practice with liquids like scented dish detergent, grape juice, or perfume. First, have her hold the item close to her nose and smell. Then, have her try wafting. What's the difference? (When she holds it close to her nose, the odor is much more intense. That's why it's safer to use wafting during science experiments.) 🐛



# Take-away lessons

Subtraction is fun with these hands-on activities. Try them with your child.

**Find the missing number.** Put out 10 buttons, and have your youngster close her eyes while you hide some under a bowl. Ask her to open her eyes, count the number left (4), and figure out the missing number (6). Take turns doing this, and then play again with 15 or 20 buttons. *Tip:* Each time, have your youngster write the number sentence ( $10 - 6 = 4$ ).

**Draw a ladder.** Help her draw a ladder with 10 rungs and number each rung. Give her a subtraction problem ( $8 - 5$ ),



and let her use the ladder to count down. The number of rungs from 8 to 5 (3) is her answer. Have her practice with more problems, and then she can draw a 20-rung ladder and try two-digit problems.

**Act it out.** Make everyday situations into subtraction questions. When her sister wants to borrow barrettes, you can say,

“You have 14 barrettes. If Maggie borrows 2, how many will you have left?” Then, she can lay out her 14 barrettes, give 2 to her sister, and count how many she still has (12).

## MATH CORNER

### Taller or shorter?



Let your youngster practice measurement skills as she compares her height to objects around her.

First, have her lie down. Lay a piece of string or yarn alongside her from the top of her head to the bottom of her feet. Cut the string. Now let her use the string to measure objects in your home.

How many objects can she find that are taller than she is (coat closet, refrigerator) or shorter (coffee table, ottoman)?

Then, use string to measure other parts of her body, like the length of her arm or leg. What objects can she find that are shorter and longer? She could also compare the strings to each other. What's longer: her arm or leg? Her hand or foot?



*Idea:* Make a string measurement for each person in the family. Your youngster will enjoy comparing who's taller or shorter than the bookcase or kitchen cabinet.

## SCIENCE LAB

### No more brown apples

“Yuck! I can't eat these apples. They're all brown!”

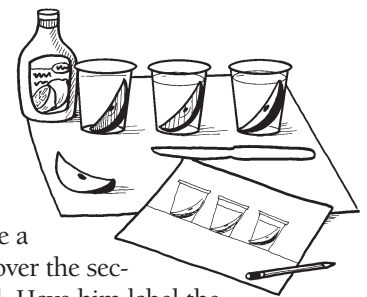
With this experiment, your youngster will learn a way to keep apple slices from turning brown.

*You'll need:* apple, knife, 3 clear plastic cups, water, lemon juice, marker, paper, crayons

*Here's how:* Slice the apple, and let your child place a piece in each cup. He should leave one slice alone, cover the second one with water, and put lemon juice on the third. Have him label the cups (“air,” “water,” “lemon juice”) and draw a picture of each one. He can observe the apples several times for a day, each time drawing pictures to show changes.

*What happens?* The apple that was exposed to the air only will quickly turn brown. The one covered in water will turn light brown. The one coated in lemon juice will stay white.

*Why?* Apple slices turn brown when they are exposed to oxygen from the air (they oxidize). Lemon juice protects them from oxygen and keeps them from turning brown. Being submerged in water slows down, but doesn't stop, the oxidation process.



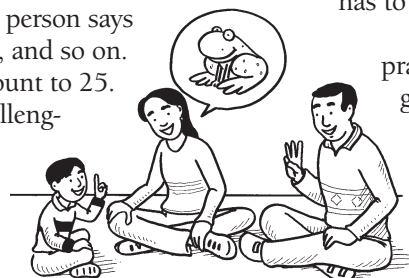
## Q & A Mental math

**Q:** My son's teacher mentioned that they're working on mental math this year. How can we help him practice at home?

**A:** To get your child used to doing math in his head, try a game that requires keeping track of numbers. Sit in a circle, and count—the first person says 1, the next person says 2, and so on. Keep playing until you count to 25. Make the game more challenging—and funny—with this twist: say “frog” for every even number (1, frog, 3, frog, 5, frog, and so on).

Or give your son a math problem ( $3 + 4$ ). When he answers, ask how he solved it. Explaining his reasoning will help him feel comfortable doing mental math. Also, you could let him check his answer on a calculator—he'll feel confident when he gets it right (or realize he has to try again if he doesn't).

You can use car time to practice, too. Take turns giving each other math questions to answer (“Which is more—11 or 9?”) or patterns to complete (2, 4, 6, \_\_\_).



## OUR PURPOSE

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

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