

# Math+Science Connection

Beginning Edition

Building Excitement and Success for Young Children

February 2014

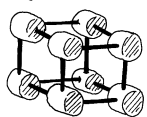


## TOOLS & TIDBITS

### Color-coded trucks

On car trips, have your child take along pencil and paper and keep track of the colors of trucks he sees. He could list colors in one column and make a tally mark for each truck. Then, he can count his results and analyze his data. Which color did he see the most? The least?

### Crystal clear



Let your youngster pour salt and sugar into separate piles and examine them with a magnifying glass. She'll see that these everyday substances are made up of beautiful crystals. Help her identify the shapes and then re-create them with toothpicks and marshmallows. For instance, she could use 12 toothpicks and eight marshmallows to make the cubes found in salt.

### Web picks

At [abcya.com](http://abcya.com), your child can sort cute bugs into jars, time travel to learn how to tell time, and use colorful marbles to solve addition problems.

How does my brain work? Help your youngster find answers at [faculty.washington.edu/chudler/chgames.html](http://faculty.washington.edu/chudler/chgames.html). He'll trick his eyes with optical illusions, test his reaction time, and more.

## Just for fun

**Q:** If you had eight bananas in one hand and five bananas in the other hand, what would you have?

**A:** Really big hands!



## Domino dots

A set of dominoes makes a great math tool. Get yours out, or pick up a set at the dollar store, and play these games.

### Number match

Lay the dominoes facedown on the table. Have your child select dominoes and draw them, using a white crayon on black construction paper. She'll practice counting the dots as she makes matching versions. And drawing the patterns will help her recognize arrangements of numbers at a glance.

### Missing number

Put the dominoes in a bowl. Choose two, and tell your youngster the total number of dots (12). Show her one of the dominoes (6/2), and ask her to figure out how many dots have to be on the other one (4). Let her sketch the different combinations of dots that the domino

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could have (3 and 1, 2 and 2, or 4 and 0). Then, it's her turn to ask you for the missing number.

### Number guess

Place the dominoes number side up, and play a guessing game. Each person secretly picks a tile and gives the other person clues to hers. For example, you might say, "Both halves of my domino have even numbers." "The total is less than 10." As you give each clue, your youngster can move away the dominoes that don't fit. 🐛

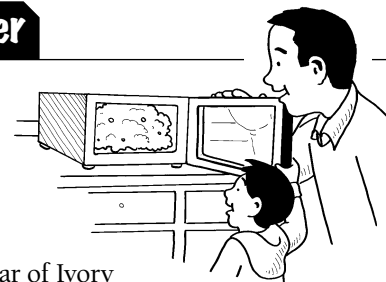
## Soap that gets bigger...and bigger

Your child will be amazed by this sudsy chemistry activity.

Put a bar of Ivory soap in the microwave (on a paper towel) at high for two minutes. When you open the door, what does he see? (A big, fluffy cloud of soap.)

To help him understand why, cut another bar of Ivory in half, and have him look for air bubbles. When the soap got hot, the air trapped in the bubbles expanded. This demonstrates Charles's Law, which says the volume of a gas (air) increases as temperature rises—as the soap heated up, the air inside took up more space.

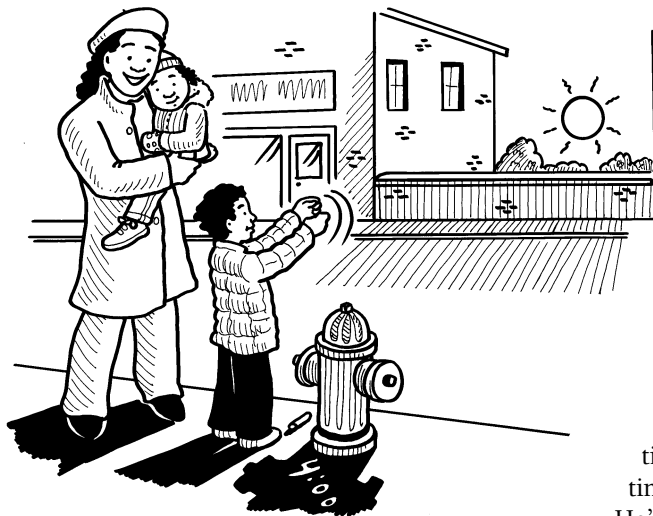
*Tip:* Your youngster can use his "puffy soap" for his bath. The new shape and size will make getting clean fun! 🐛



# Groundhog Day

Whether or not the groundhog sees his shadow February 2, your youngster can play with shadows all month long to explore math and science. Enjoy these ideas together.

**Find shadows.** Take a walk on a sunny day, and look for shadows. Your child might notice shadows thrown by a stop sign, his best friend's house, or someone riding a bike. What's the biggest shadow



he can find? The smallest? The fattest or the thinnest? Explain that shadows are formed when an object blocks the light—in this case, the light of the sun.

**Track the time.** Let your youngster pick a nearby object like a bush or fire hydrant. He can outline its shadow in chalk and write the time. Return at different times of the day, and repeat. He'll find that the shadow's size and position change. Have him notice the sun's position in the sky each time he checks a shadow. A fun way to measure that is by asking, "How many fists up from the horizon is the sun?"

**Measure and compare.** Stand in the sun so your child sees your shadow. What can he tell? (The shape of your body.) What can't he tell? (The color of your hair.) Next, let him measure shadows of family members or friends by cutting yarn the

## Shadows and sundials

Does your child know that before there were clocks, people used shadows to tell time? The ancient Egyptians figured out a way to divide a circle into "hours" and tell time depending on where the shadow fell at different times of the day. That device was called a *sundial*.



Your youngster could make a "shadow tracker" by gluing a golf tee to the center of a paper plate. Have him tape it to a sunny spot outside. Then, help him mark the shadow and record the actual clock time for each hour of daylight.

length of each one. Ask him to predict how the yarn lengths will compare to the person's actual height (shorter, longer, the same). Then, he could hold the yarn against each person (lying down, if they're too tall) to check.

## PARENT TO PARENT Hunting for math treasure

The other day, our children were complaining about being indoors again because the weather was bad. I happened to be on the phone with my sister, who is a math teacher, and she suggested an activity that kept them happily occupied—and learning.



Using index cards, they each made a set of cards representing the numbers 1 through 20. For example, for the number 4, my son drew a cake with 4 layers. For 12, my daughter made 3 doll carriages with 4 wheels each. On the flip sides of the cards, they put their initials. Then, they each hid their cards around the house, and the other one had to find them—and put them in order.

Making and finding the cards was a fun way for our kids to practice counting and writing numbers. And it was nice to see them playing together!

## 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

## SCIENCE LAB Blubber, blubber

When your child gets cold, she puts on a coat. But what does a seal or polar bear do to stay warm? This "cool" experiment will show her.

**You'll need:** two bowls, water, ice cubes, solid shortening

**Here's how:** Have your youngster fill two bowls with water and ice cubes. Coat one of her hands with a thick layer of shortening. Let her put a hand in each of the icy

bowls. Which one can she keep in the water longer?

**What happens?** She will be able to leave her shortening-coated hand in the cold water longer.

**Why?** The shortening (a fat) acts as an insulator and provides protection from the cold. Mammals that live in cold water, such as seals, sea lions, and polar bears, have a layer of blubber (fat) that keeps them warm as they swim in icy waters.

