

# Math+Science Connection

Beginning Edition

Building excitement and success for young children

December 2010

Prospect Point Elementary School



## TOOLS & TIDBITS

### Count your cereal

Give your child a muffin tin and a bowl of cereal.

Ask her to count the muffin cups (1, 2, 3...). Then, with clean hands, let her count pieces of cereal aloud into each muffin cup: "One has one. Two has two," and so on. When she finishes, she can eat her counting practice!

### Snow journal

This winter have your youngster keep a record of snowfalls. In a notebook, she can record the date, time, and amount. Suggest that she draw pictures of the snow falling and your snowy front yard, too. *Note:* If your area isn't likely to get snow, suggest a rain journal instead.

### Web picks

Make a graph, use an electronic abacus, solve math problems, and much more at <http://illuminations.nctm.org/ActivitySearch.aspx>. Parents and youngsters can search by grade level and math topic.

Get your children excited about science at [www.sciencebug.org](http://www.sciencebug.org). They can find science experiments in the backyard, learn about the five senses, and design a tower.

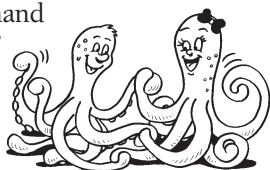
### Worth quoting

"Learning is like rowing upstream; not to advance is to drop back."  
*Chinese proverb*

## Just for fun

**Q:** What did the boy octopus say to the girl octopus?

**A:** "Can I hold your hand hand hand hand hand hand hand hand hand?"



## The shape of things

Recognizing shapes is a first step in learning about geometry. Help your child understand what different shapes look like—and get used to seeing them all around him—with these ideas.

### Walk the shape

Use masking tape to create giant outlines of a square, triangle, and rectangle on a basement or garage floor. Play follow-the-leader (take turns being the leader) and walk, hop, or skip around the edges of the shapes. This will help your youngster feel how each shape is formed. *Idea:* Make more unusual polygons like a pentagon (five sides), a hexagon (six sides), a heptagon (seven sides), or an octagon (eight sides).

### Go on a hunt

Which shape is most popular in your house? Challenge your family to a shape treasure hunt. Give each person a pencil and a sheet of paper divided into four sections: Circles, Squares, Rectangles, Triangles. Set a timer for 15 minutes, and go hunting! Make a tally mark for



each object you spot in the correct section. *Example:* A clock might be a circle and a kitchen cabinet door a rectangle.

### Create a quilt

Cut out squares, rectangles, and triangles in different sizes from construction paper. Then, have your child glue the shapes side by side into a colorful quilt on a large piece of paper. Encourage him to create larger shapes out of smaller shapes, such as one big square out of four smaller squares. *Idea:* If you have any real quilts at home, let your youngster point out the shapes he sees in them.

## Poke a potato

Ask your child if a straw can go through a potato, and she'll probably say, "No way!"

Then, let her try. Place a raw potato on a table, and help her hold it firmly with one hand (make sure her hand is not under the potato). Have her cover the top of a straw with her thumb and jam the straw into the potato. *Tip:* Tell her to use her "strong muscles" to push the straw fast and hard into the potato. The straw should go right in (if it doesn't, have her try again—and do it a little quicker and harder).

Explain that this experiment demonstrates an important law of science: an object will remain at rest (the potato) or keep moving (the straw) unless a stronger force pushes or pulls it. The straw had *momentum*—that is, it kept moving right into the potato.



# Water, water everywhere

Exploring the science of water is easy. Just turn on your faucet, and let your youngster experiment. Here are three ideas.

**Pour.** Have your child fill a plastic container with water and then pour the water out into a container that's a completely different shape. She'll see that the same water that looked tall and skinny before, for example, now looks short and squat. That's because water doesn't have a shape of its own—it takes on the shape of the container it's in.



**Freeze.** Help your youngster partially fill several different-sized containers with water and place them in the freezer. Have her check them every 30 minutes, tilting the containers to see if the water is still liquid. How long does the water take to freeze? Do smaller containers freeze sooner than larger ones?

**Melt.** Finally, let your child watch ice turn back into water. Tint salt with a drop of food coloring. When the salt is dry, pop the ice blocks out of the containers and onto a cookie sheet. Have her sprinkle the colored salt on the ice. She'll see the salt creating holes as it melts the ice. *Note:* Salt speeds up the melting process because it lowers the freezing point of water.

## SCIENCE LAB

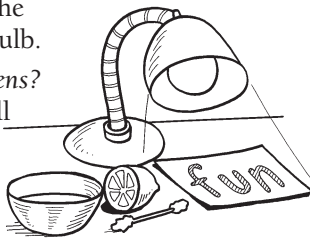
### Invisible ink

Your child can pretend he's a secret agent with this scientific method for writing secret messages!

*You'll need:* lemon, bowl, water, spoon, cotton swabs, white paper, lamp

*Here's how:* Cut the lemon in half. Let your child squeeze lemon juice into the bowl, add a few drops of water, and mix with the spoon. Have him dip a cotton swab in the mixture and use it to write a message on the paper. Then, hold the paper under the lamp's light bulb.

*What happens?* The letters will appear, and you will be able to read your youngster's secret message.



*Why?* When the paper heats up, the lemon juice oxidizes and turns brown, so the letters appear.

*Idea:* Experiment with other substances in place of lemon juice. Some that will work are orange juice, milk, honey, and vinegar.



## PARENT TO PARENT

### Math + books

Our son loves to read, but he didn't seem to like math as much. At our parent-teacher conference, Ben's teacher suggested that we try reading storybooks that have a math theme. Mrs. Taylor said this would help Ben get comfortable with math and bring it to life for him. Plus, she said it would be a good way to introduce skills like multiplication and division that he'll be learning later.

She suggested a few titles and said we'd be able to find more at the library. Once we began looking, I couldn't believe how many children's books there are about math. We've read stories about everything from counting and measurement to subtraction and percentages. We've even found some favorite "math authors" like Stuart Murphy, Greg Tang, Jerry Pallotta, and Marilyn Burns.

And you know what? After reading the books, Ben seems more interested in his math work at school!



## MATH CORNER

### Make a sand timer

Does your child know that the sand timer she uses for board games was one of the earliest ways that time was measured? She can make her own sand timer and learn about the passage of time with this idea.

Start by helping her measure  $\frac{1}{2}$  cup of sand. Then, poke a hole in the bottom of a paper cup with a pin or pencil. Cover the hole with your finger while your child pours the sand into the cup. Hold the cup over an empty paper

cup, remove your finger, and let her watch the sand trickle out.

Repeat the activity, and this time set a stopwatch or cell phone timer to time how long it takes the sand to run out. What does your child think she can do in that amount of time? She might see how many steps she can take, how far she can get in the alphabet song, or how many times she can say her name before the sand runs out.



**OUR PURPOSE**  
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