

Math+Science Connection

Beginning Edition

Building excitement and success for young children

March 2010

Sparta Area Schools
Southside School

TOOLS & TIDBITS



Count all day

Find reasons for your child to count all day long. She can count the books on her shelf, the squares of the sidewalk, and the apple slices on her plate. Asking, "How many are there?" throughout the day will get her used to counting and improve her number sense.

Bird watching

Here's a way for your youngster to observe bird behavior. Have him put scraps of string, yarn, felt, and ribbon in an empty mesh onion bag. Hang the bag from a tree, and let him watch birds take pieces for their nests. Can he spot any of the items in bird nests around your neighborhood?

Book picks

Stripes, dots, colors, and words make up the patterns in Trudy Harris's story of ocean life. *Pattern Fish* begins with simple patterns and moves on to more complex ones.

Marvelous Mattie: How Margaret E. Knight Became an Inventor (Emily Arnold McCully) tells about the first woman to get a U.S. patent. Children will delight in Mattie's life story and the sketches of her inventions.

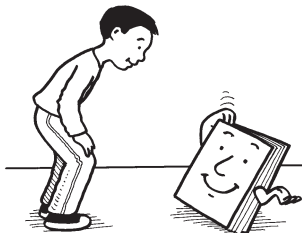
Worth quoting

"There are not seven wonders of the world in the eyes of a child. There are seven million." *Walt Streightiff*

Just for fun

Q: What did the math book say to the student?

A: Please solve my problems.



Sort it out


When your child groups toys or divides books into those about animals and those about people, he is *sorting*.

Sorting helps him see the similarities and differences between objects—an important skill for both math and science. Use these steps to practice:

1. Describe an object for your youngster by giving its *attributes*—the details that make it unique. For example, you could say a basketball is orange, round, bumpy, big, and heavy. Ask him to use attributes to tell you about a few items.
2. Help your child see different ways to sort objects. You might lay out a dozen toys and say, "Show me all the blue ones." Next, ask him to find all the ones that have wheels. Finally, have him sort out the ones that are both blue and have wheels.




3. Play "Guess the Rule." Take turns pointing to objects that have an attribute in common. The other person has to figure out what trait they share. For example, you might point to a grapefruit, a baseball, and a globe. *Answer:* They're all round.

4. Let your youngster decide how to sort items. He might group a deck of cards by color (red, black), suit (hearts, clubs, diamonds, spades), or number (2s, 3s, and so on). Or have him sort different kinds of dry pasta. When he's done, ask him how each pile is the same. *Examples:* "These are straight. Those are curvy." 

Red celery?

Here's an activity that lets your youngster turn celery red—while learning about plants.

Leaving the leaves attached, cut a piece of celery so the stalk is 4 inches long. Then, have your child mix 10 drops of red food coloring into $\frac{1}{4}$ cup water. She can stand the celery stalk in the water and check on it regularly. Within a few hours, the celery stalk and leaves will start to turn red! *Note:* The longer the stalk sits in the water, the brighter red it will become.

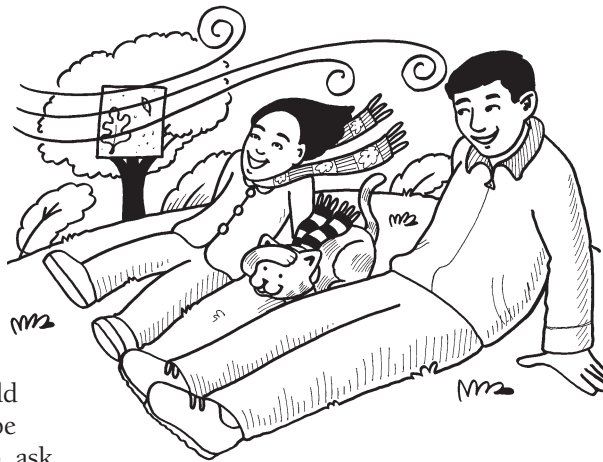
You can explain that *capillary action* causes the red water to travel through the narrow tubes (called *capillaries*) in celery. These capillaries carry water and nutrients through plants and help make the food they need to grow. 



Windy days


Is March coming in like a lion? Use the opportunity to help your youngster learn about wind. Try these suggestions.

Experience the wind. Put on hats and scarves, and go outside for a walk in the wind. What does your child notice? She might see tree branches swaying or a leaf being blown across the yard. Have her hold up a washcloth or paper napkin—she'll be excited to see it blowing in the wind. Also, ask



what the wind feels like on her face. See if she can tell you where the wind is blowing from (“behind me” or “in front of me”).

What can the wind carry?

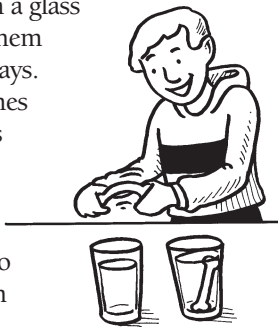
Poke a small hole in the top of a piece of cardboard (8½ x 11 inch or larger), and tie a piece of string through it. Have your youngster spread something sticky (petroleum jelly, pancake syrup) on one side, and hang the cardboard from a tree on a windy day. After about an hour, take it down, and let your child see what is stuck to the cardboard. There might be seeds, leaves, or dust. She'll see how the wind carries things from place to place. 

SCIENCE LAB Strong bones


This experiment will show your child what happens to bones that lose minerals—and help him see why it's important to drink milk!

You'll need: 2 poultry bones, 2 glasses, water, vinegar, paper towel

Here's how: After having chicken or turkey for dinner one night, wash two bones and let them dry overnight. Have your youngster put one bone in a glass of water and the other in a glass of vinegar. Let them soak for three days. Remove the bones from the glasses and dry them with a paper towel. Then, ask your child to try to bend each bone.



What happens? The one soaked in vinegar will be soft and bendable. The one that was in water will not have changed.

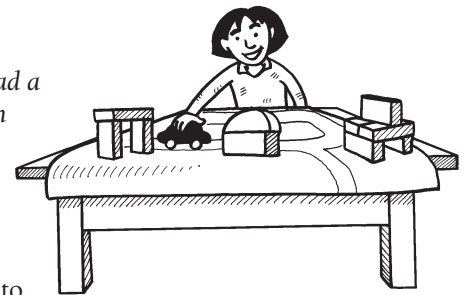
Why? The vinegar causes a chemical reaction that dissolves the calcium in the bone. The other bone still has calcium, so it remains strong. 




Q & A Making maps

Q: My daughter wanted to help me read a map the other day. How can she begin to learn map skills?

A: A good first step is to have her make a map. She can start with a 3-D version by building a block city. Encourage her to line up blocks to create intersecting streets and to build stores and houses along them. Have her use toy people to show you different routes through her town. For example, ask how they would go from their house to the bank (“They go straight down this street and turn right”).



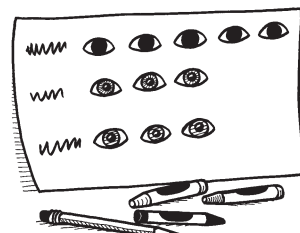
Then, have your youngster draw a map of her block city on a piece of paper. Suggest that she stand up and look down on it so she can see the shapes of her buildings and streets. Ask her questions that show relationships, such as “What is *next* to the red house?” or “What is *in front of* the bank?” Learning to make and read maps will help her understand directions and build spatial skills. 


MATH CORNER Take a survey

Your child can find interesting information about family and friends and learn ways to analyze the data with these two ideas:

- Have him take a survey of a family trait (eye color). He can check with your immediate family as well as grandparents, aunts, uncles, and cousins. To show his findings, suggest that he make a *pictograph* by drawing different-colored eyes in separate rows (5 brown for the 5 people with brown eyes, 3 blue, 2 green).

- Let him survey friends about their favorite pets, ice cream flavors, or TV shows. First, have him list choices (*example:* favorite pets could be dog, cat, hamster, or guinea pig). As he asks each friend, he should make a tally mark next to the animal chosen.



Then, he can add up the tally marks and report the results. (“Six people like dogs the best. Two people like cats the best.”) 

OUR PURPOSE

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