

# Math+Science Connection

Beginning Edition

Building excitement and success for young children

November 2011

## TOOLS & TIDBITS

### Estimate the bites

“How many bites will it take to eat your sandwich?” Asking questions like that will help your child practice estimating. Encourage her to use words such as *approximately*, *about*, and *almost*. (She might say, “It will take *approximately* 10 bites.”) Then, have her check her estimate by counting bites.

### My science board

Make a portable science lab for your child by tying a magnifying glass to the handle of a cutting board. Then, have him find objects to study. He might compare different fruits or examine a small houseplant. Or go outside, and let him put bugs or rocks on his board to observe. (*Note:* Be sure he releases the bugs afterward.)

### Book picks

Enjoy catchy rhymes about a bear who finds a “hexagon treat” in a beehive, a child who counts dragons by 10s, and more. Each poem features a math concept in *aRHYTHMetic* (Tiffany Stone, Kari-Lynn Winters, and Lori Sherritt-Fleming). Also available in French.

Pictures and words tell the story of each animal’s home in *Where Do I Sleep? A Pacific Northwest Lullaby* (Jennifer Blomgren). A nice bedtime read-aloud that teaches about animals.

### Worth quoting

“Nature does not hurry, yet everything is accomplished.” *Lao Tzu*

### Just for fun

**Q:** How does a monster count to 100?

**A:** On his fingers and toes.



## Awesome algebra

Your youngster can begin building a foundation for algebra now. These fun activities will help pave the way.

### Secret code

Learning to spot patterns is an important first step to understanding how numbers relate to each other. Write a simple pattern with letters (*ababab*) and ask your child to use snacks or small toys to create it (nut, raisin, nut, raisin, nut, raisin). Then, let him give you a pattern to follow. *Idea:* Make a pattern with objects first, and have him write the code.

### Circle power

Help your youngster see that there are different ways to make the number 5 (or any other number). Draw 3 rows of 5 circles each. Use two crayons to color different combinations in each row (3 blue and 2 red circles, 4 blue and 1 red circle, 5 blue and 0 red circles). Can your child write the number sentence for each row? ( $3 + 2 = 5$ ,  $4 + 1 = 5$ ,  $5 + 0 = 5$ )

### Weather game

When is picking out clothes like a science lesson? When your child considers the weather as she decides what to wear! This game will get her thinking.

Together, cut 10 weather-related pictures and 10 clothing photos from old magazines. For example, you might cut out pictures of a rainy day, a sunny beach scene, a snowstorm, a raincoat, a bathing suit, and snow boots.

Turn the pictures over, and spread them out on a table or the floor. Take turns flipping over two pictures at a time. If you turn over a weather and clothing picture that go together, keep them. If not, turn them back over. Keep playing until all the matches have been collected.



Next, have him color a set of circles for you, using a different number.

### Equal or not

In algebra, your youngster will solve equations that are equal (*equalities*) and not equal (*inequalities*). He can start with this game. Shuffle a deck of cards (face cards removed), and take turns picking two. Lay them down side by side, and say the number sentence they create. *Examples:* 4 is more than 2, 5 is less than 7, 3 equals 3. Score 1 point for an inequality (more than, less than) and 5 points for an equality (equals). High score wins.



# Graphing on the go

Collecting and graphing information is good practice for math and science lessons—and it can be fun to graph real-life items outdoors. Try these ideas.

**Nature.** Together, pick up items that have fallen from trees, such as leaves, acorns, buckeyes, pinecones, and twigs. Have your child make a giant graph by lining up each type in a separate column on a sidewalk or playground blacktop (*note: make sure the items in her rows line up evenly, too*). She can use sidewalk chalk to label the bottom of her graph by object (“Leaves,” “Acorns”) and the left side by number (1, 2, 3).



Then, she can “read” her graph (“There are more leaves than acorns”).

**Outings.** Encourage your youngster to think of things to graph while you’re out together. Before a trip to the zoo, for instance, she might decide to graph animals by color or by whether they live on land or in water. On a sheet of paper, help her make and label a grid to use. Then, as you walk around the zoo, she can sketch pictures of the animals in the matching column. Or at the playground, she could graph the equipment (number of swings, sliding boards, seesaw) or the people (number of boys, girls, adults).

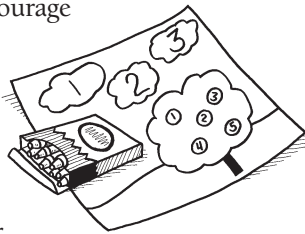
## MATH CORNER

### Math pictures



Combining math and art is a fun way for your youngster to build number skills. Here are some suggestions.

● **Draw and count.** When he draws a picture, encourage him to count the objects and write the numbers. For instance, he could number the apples in a tree (1, 2, 3, 4, 5) or the clouds in the sky (1, 2, 3).



● **Hide the numbers.** Suggest that your child choose a crayon and randomly write numbers on a sheet of paper. Then, with other colors, he should turn the numbers into objects (*example: a 7 might become the sail on a boat*).

● **Make number posters.** Have him use fancy pens or markers to write a number on a piece of construction paper. He can illustrate the number with sets of objects that match. For instance, if he writes a 3, he might draw 3 people, 3 balls, and 3 houses. *Idea:* Ask him to make a poster for each number 1–10.

## Q & A

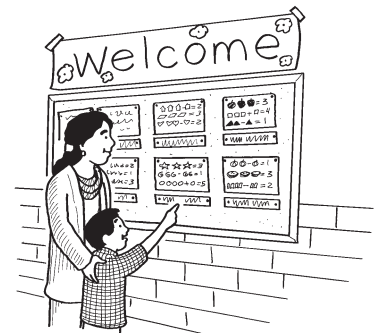
### Parent involvement

**Q:** I’ve read that it’s important to be involved in my child’s education. What should I do to get involved in what he’s doing in math?

**A:** The best—and easiest—way to be involved is to show interest in what he’s learning. Ask him to show you his math papers and explain his work. Let him be the “teacher”—he’ll enjoy sharing his knowledge, and going over the steps will boost his own learning.

Then, support math activities at school. Attend functions like Family Math Night. You could also offer to volunteer. If you’re available during school hours, his teacher may want you to listen as children recite math facts. Or if you can help in the evenings or on weekends, you could prepare materials for math centers.

Finally, bring math into everyday life with your youngster. You might point out how many stamps you need for your letters or how many slices of bread you need to make lunch. Let him know that you use math all the time—and that you love numbers!



## SCIENCE LAB

### Sound of music

Why do different strings on a guitar produce different sounds? With this experiment, your child will make her own “guitar” and find out!

*You’ll need:* empty cereal or cracker box, rubber bands of different widths

*Here’s how:* Help your youngster stretch the rubber bands around the box—they will be the “strings” of her instrument. Then, have her pluck the rubber bands, one at a time, and compare the

sounds. Which one sounds the highest? The lowest?

*What happens?* She’ll find that the thicker the rubber band, the lower the note sounds. The thinner the band, the higher the note.

*Why?* Sound is made by vibrations. On a smaller surface like the thinner rubber band, vibrations are faster and make a higher pitch. Vibrations are slower on a larger surface (the thicker band) and produce a lower pitch.



## OUR PURPOSE

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

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ISSN 1942-910X