

Math+Science Connection

Beginning Edition

Building Excitement and Success for Young Children

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Gardiners Avenue School
Dr. Jared Vanderbeck, Principal

TOOLS & TIDBITS

Laundry fractions

Let your child help you fold laundry, and talk about *halves* and *fourths* as you work. This will get him ready to learn about fractions. You might show him how to fold pants in half before you put them on hangers, or ask him to fold washcloths into *quarters*.

Head in the clouds

Encourage your youngster to be a sky watcher and record how clouds change throughout the day. Each day for a week, have her draw the clouds she sees in the morning, afternoon, and evening. What patterns does she notice? Perhaps she saw more clouds in the afternoons or pinkish clouds at sunset.



Web picks

Your child can play math games at math.rice.edu/~lanius/counting/index2.html. There are pattern blocks to explore, graphs to make, and ten frames to compare.

Have a race in space, put together a skeleton, and find many more exciting science activities at static.lawrencehallofscience.org/kidsite.

Just for fun

Q: Six kids were trying to walk under one umbrella. Why didn't anyone get wet?

A: It wasn't raining.



Count on it

Counting requires your youngster to do many things at once! She has to say numbers in the right order while matching each number with each object that she counts. Try these activities to help her count with confidence.



Play dough smash

With this activity, your youngster will be sure to slow down and touch each object as she counts it. Work together to roll play dough into 10 tiny balls. Line them up on a table. Ask her to count them, squishing each ball as she says its number. Next time, have her roll 15 balls to count and squish, and then 20. This helps her practice *one-to-one correspondence*—matching the number to the object.

Encourage her to count the objects as she sets each one in front of an animal ("1 book, 2 books, 3 books..."). *Idea:* Perhaps she'll read a counting book aloud to her "students"!

Heart puzzles

Let your child practice matching numerals to the number of objects they represent. Help her cut out 20 construction paper hearts and draw a zigzag down the center of each. She should write a number, 1–20, on the left halves. Then, she can count aloud as she draws tiny hearts on each right half to match (on the "4 heart," draw 4 little hearts). Cut the hearts apart, mix them up, and ask her to put them back together correctly.

Stuffed animal school

Suggest that your child play school with her stuffed animals. She could put them in a circle and give each one 1 book, 1 paper, and 1 pencil. If she has 6 animals, she'd need 6 of each supply.

My book about animals

Observing animals helps your child learn about the natural world around him. When he notices a squirrel munching on an acorn or a bird landing on a tree branch, have him describe what he sees—and then make a "shape book" about the animal.

Draw the shape. Let him fold a sheet of construction paper in half, draw the animal, and cut it out. Help him staple the two shapes together to create a front and back cover, and glue white paper inside for writing.

Write the words. Encourage him to write about the animal's behavior, appearance, and habitat. He might say, "A squirrel stuffs a lot of acorns in its cheeks" or "A cardinal is bright red." Listen as he reads his book aloud.



Engineer at play

Your child can think like an engineer by building the strongest possible bridge for his toy cars to drive across. Suggest these steps.

1. Have your youngster design a bridge by sticking together marshmallows and toothpicks. He might make it wide or narrow, build one layer or several layers, or include arches or support beams.



2. Let him arrange two chairs or two tables several inches apart and balance his bridge across the span.

3. Now your child can cut a piece of cardboard to fit on his bridge and add toy cars, one at a time. How many cars will the bridge hold before it collapses?

4. Encourage him to redesign and rebuild his bridge to try to support more cars. Which design holds the most cars?

MATH CORNER

On a math mission

Your youngster's mission: to locate numbers all around town. With this idea, she will see that numbers are everywhere and learn about different ways they are used.

Help her make a list of things to find. Then, go for a walk, drive, or bus ride together, and let her check off each item she spots. Here are ideas to start with:

- A one-digit number (Highway 1)
- A number that's part of a business name (Route 28 Diner)
- An ordinal number (4th Street)
- A number word ("Buy one, get one free!")
- A house with an even-numbered address (42 Maple Avenue)
- Three numbers in order (24th on a street sign, 25 on a speed limit sign, 26 on a license plate)
- The answer to $7 + 5$ (Exit 12)
- A five-digit number (Population: 10,971)
- A price (\$2.50 per gallon)



Q & A

Baking up arrays

Q: My son is learning about arrays in school. What are these exactly, and how can we work on them at home?

A: An array is an arrangement with equal rows and columns. For instance, if your child's classroom has 6 rows with 4 students in each, that's an array. He could think, " $4 + 4 + 4 + 4 + 4 + 4 = 24$ "—and that helps him get ready for multiplication ($6 \times 4 = 24$).

Baking cookies together is a yummy way for your son to explore arrays. Let him place tablespoons of dough on a cookie sheet in rows and columns. Now he can add to figure out how many cookies you're going to bake. He might see 3 rows of 4 cookies ($4 + 4 + 4 = 12$) or 4 rows of 3 cookies ($3 + 3 + 3 + 3 = 12$). Either way, he'll get the same answer—12—and your family will have 12 cookies to enjoy with milk!



SCIENCE LAB

How sound travels best

What can go through air, water, and even walls? Sound! This experiment will show your youngster which kind of *matter*—gas, liquid, or solid—conducts sound the best.

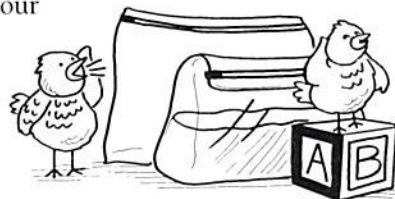
You'll need: 2 sealed plastic zipper bags, 1 empty (filled with air) and 1 filled with water; 1 wooden block; 1 pencil

Here's how: Have your child predict whether a noise will sound louder when it travels through air (a gas), water (a liquid), or a block (a solid).

Then, she can check her prediction. First, let her hold the bag of air close to her ear while you gently tap the bag with the pencil. Try again with the bag of water and then with the block.

What happens? Your youngster will notice that the sound is loudest through the block—a solid.

Why? Sound travels best through solids because the molecules are packed more tightly in solids than in liquids or gases. The sound has more particles to bounce off of, creating a louder noise.



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
800-394-5052 • rfcustomer@wolterskluwer.com
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