

Math+Science Connection

Beginning Edition

Building Excitement and Success for Young Children

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Tom Williams Elementary School

TOOLS & TIDBITS

Coin impressions

Your youngster can make play dough

“coins” to practice recognizing pennies, nickels, dimes, and quarters. Have her press the front and back of each type of coin into a different color circle of play dough. Then, encourage her to sort a handful of change, saying each coin’s name and value as she stacks it on its impression.

Search for critters

Take a walk with your child to observe animals in their natural habitats. He might see squirrels and birds in a tree and ducks and frogs in a pond. Suggest that he draw each habitat and its animal residents—he

will discover that different creatures can share the same habitat.



Book picks

▣ *A Second, a Minute, a Week with Days in It* (Brian P. Cleary) shows the many units and methods people use to measure time.

▣ Flowers turn toward the sun. Roots search for water. *Plants Can't Sit Still* (Rebecca E. Hirsch) teaches readers that plants move even if they stay in the same place.

Just for fun

Q: How far into the woods can a deer run?

A: Halfway. After that, he's running out of the woods!



Playing with shapes

Finding and making shapes is fun for youngsters—and a great way to explore geometry. Try these ideas.

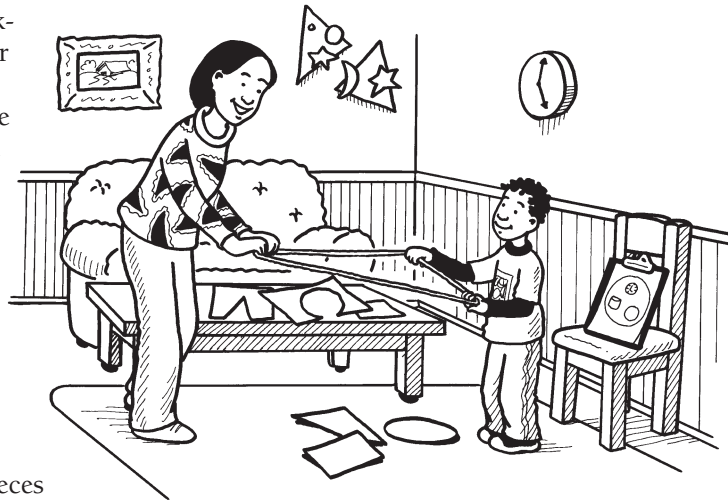
Shape detective.

With this activity, your child will notice real-life shapes. Have him draw a circle, a triangle, a square, a rectangle, and an oval on separate pieces of paper. Then, he can clip the papers to a clipboard and search for objects with the same shapes. Ask him to sketch a picture of each one he finds on the matching page (a clock on the circle page, a front door on the rectangle page). Which shape is most common inside? Outside?

Around the edges. Help your youngster cut shapes from poster board and put them in a paper bag. With his eyes closed, have him pull them out, one at a time. Can he identify each shape by touch? Have him open his eyes and

count the number of sides and corners. (“A square has 4 sides and 4 corners.”)

On a string. Cut a 4-foot piece of yarn, and tie the ends together. Hold one side, have your child hold the other side, and stretch it tightly between you to form a straight line. Let your youngster grab the middle of the yarn with his other hand and pull it out to make a triangle. Then, use your other hand to form a square. How many different shapes can you make together? 🦋



Engineer a no-drip ice-cream cone

If your youngster doesn't lick her ice cream fast enough on a hot day, it will drip down the cone! Suggest that she solve this sticky problem by engineering a dripless cone.

Ask what she could add to a cone that would catch melting ice cream. She might use nut or seed butter to stick raisins around the rim.

Now help your child scoop ice cream into the cone. Does any drip onto her hand? If so, the next time she eats ice cream, she can try a new design and test it. 🦋



Sandbox learning

Scoop, pour, measure, and more! These activities let your child explore math and science in a playground sandbox or at the beach.

How many scoops? Have your youngster scoop heaping shovel-fuls of sand into a bucket. Encourage her to count each scoop and keep track by making tally marks in the sand. When the bucket is full, she can dump it out and try again—this time counting tiny scoops of sand. Does she think it'll take more or fewer



scoops to fill the bucket? How could she fill it with about the same number of scoops every time? (Level off each scoop—just like when you measure flour or sugar for baking.)

“Shrinking” sand. What does your child think will happen if she pours water into a full bucket of sand? Let her try it to find out. The sand appears to shrink! Explain that water makes the tiny grains stick together, so the sand takes up less space. Now help her turn over her

bucket, tap the bottom to loosen the sand, and pull the bucket straight up. The water holds the sand together, even when she removes the bucket.



PARENT TO PARENT

License plate numbers

In the car recently, my son Josh noticed a license plate with the same numbers as ours—471. That gave me the idea to “play math” with license plates.

Now we often take turns giving each other challenges like “Spot a license plate with a smaller number than ours” or “Find a plate with the same digits but in a different order.” This gives Josh practice reading and comparing numbers.



He also invented a game for our long drive to his grandparents’ house this summer. He created a bingo card for each passenger, with a 2- or 3-digit number in each square. He and his brothers will cross out numbers they see on license plates (like 52 in 352) and call “Bingo!” when they get five squares in a row vertically, horizontally, or diagonally.

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 • rfeustomer@wolterskluwer.com
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SCIENCE LAB

A rainbow of colors

Making this “tie-dyed” paper will show your youngster the science of mixing colors—and give him an early chemistry lesson.

You’ll need: $\frac{1}{4}$ cup whole milk, shallow baking pan, food coloring (red, yellow, and blue), dish soap, white paper

Here’s how: Ask your child to pour the milk into the pan. He should count as he squeezes 5 drops of each color into the middle of the pan and adds 1 drop of dish soap. Have him wait 1 minute, then press the paper into the liquid until colors appear on it. Set the paper aside to dry.

What happens? When the dish soap hits the milk, the colors begin to swirl and blend. His paper contains the colors of the rainbow!

Why? The soap “chases” the fat molecules in the milk, bumping into the colors. As the colors move, they combine to create more colors—orange, green, and purple.



MATH CORNER

Music + math = fun

Use familiar songs to help your child explore patterns and numbers. Here’s how.

Sing counting songs

Together, sing a song that includes numbers, perhaps “Ten Little Monkeys Jumping on the Bed.” Your child can act it out with 10 stuffed animals, making one fall off the bed as you sing each verse. For a bigger challenge (without stuffed animals), make it about 100 monkeys

and count backward by 10 as you sing that version. Other counting songs: “Hickory Dickory Dock,” “This Old Man,” “Five Little Speckled Frogs.”

Make patterns

Together, sing a familiar song like “The Wheels on the Bus,” and create a pattern of movements to go with it. *Example:* “The wheels on the bus go snap, clap, stomp, snap, clap, stomp.” Do a different pattern for each verse.

