Beginning Edition

Math+Science Connection

Building Excitement and Success for Young Children

November 2019

East Tate Elementary School
Stephanie Franklin, Principal

TOOLS & TIDBITS

Hooray for patterns

Encourage your child to practice making patterns by creating "cheers." She might count by 2s: "Give me 2, 4, 6, 8, 10. Say my pattern once again!" Or make up a cheer for her, and she can continue your pattern and add a rhyme.

"Bendy" light

Have your youngster fill a glass with water and place a spoon in it. What does he see when he looks through the side of the glass? (The spoon looks bent.) This is called refraction—the bending of light as it passes from one material to another (in this case, from air to water).

Book picks

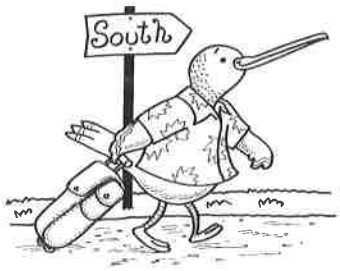
If You Were a Minus Sign (Trisha Speed Shaskan) shows cute critters solving subtraction problems as they let go of balloons, hide acorns, and more. Part of the Math Fun series.

Star Stuff: Carl Sagan and the Mysteries of the Cosmos (Stephanie Roth Sisson) tells the true story of a boy who was fascinated by the universe and grew up to become a famous astronomer.

Just for fun

Q: Why do birds fly south for the winter?

A: Because it's too far to walk.



Let's make shapes

Triangles, rectangles, circles—shapes like these make up the world around us. These hands-on geometry activities will teach your youngster about shapes and their attributes.

Walk the "tightrope"

Ask your child to make large shapes (square, triangle) on the floor with masking tape. Have him walk along the edges of each shape, balancing like a tightrope walker and counting the sides and corners (vertices). What does he notice? (A triangle has 3 sides and 3 corners, for example.) Does each shape have the same number of sides as it has corners?

Shift the shapes

How many turns will it take to make a stop-sign shape (an octagon) in this game? Each person gets 8 craft sticks and lays down 5 to form a pentagon. On each turn, a player flips a coin and changes his shape: heads = add 1 stick, tails = remove 1 stick. Name your new shape. *Example:* Flip heads, and add 1 stick to your pentagon—it's a hexagon (6 sides). Add another, and you've got a heptagon (7 sides). The first player to create an octagon (8 sides) calls "Stop" and wins.

Build in 3-D

With this activity, your youngster will see how 2-D shapes make up 3-D shapes. First, he might build a square using 4 toothpicks and 4 marshmallows. Then, he could add more toothpicks and marshmallows to create a cube (12 toothpicks, 8 marshmallows). He'll see that a cube has 6 square faces. What other 3-D shapes can he construct out of 2-D shapes?

Imagine a new animal

Your child can use what she knows about the survival skills of real animals to invent an imaginary creature.

Together, think of animals with cool features that help them survive. A porcupine's quills protect it from predators, an elephant's trunk picks up food, and a kangaroo's pouch carries babies.

Now suggest that your youngster draw an imaginary animal with a good survival strategy. Maybe she'll sketch a colorful fish that stuns predators with a cloud of sparkles. Or perhaps she'll create a furry blue mammal that lives on blueberries and camouflages itself in blueberry bushes. Encourage her to make up a story about her animal and read it to you.

Estimating with collections

Whether your youngster realizes it or not, she's probably a collector. She might have lots of scrunchies, rocks, or stickers, for instance. Here's how she can use her treasures to estimate.

Choose storage

Let your child find a way to display her collection. First she'll have to consider the size and number of her items. Will an empty jelly jar be big enough for all her scrunchies? She can put them in to find out. Not enough room? She'll need a larger container.

Make comparisons

Does your youngster have more animal stickers or food stickers? More smooth rocks or rough ones? Which color scrunchie does she have the most of? She could estimate, then sort and count to check. Now suggest that she make estimates within each group. For example, she might estimate which type of food sticker she has the most of—fruits, vegetables, or desserts. Have her count to see how close her estimate was.

MATH CORNER

That's my age!

Six candles on a cake … your child lights up at the mere mention of her special number: her age. Use this excitement to help her recognize and represent numbers.

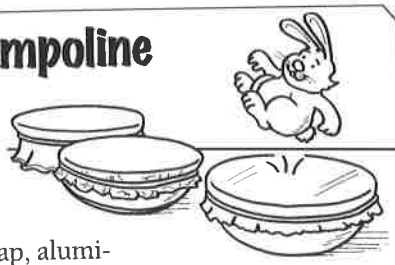
Encourage your youngster to make groups of objects (crayons, forks, blocks, toys) that have the same number as her age. For example, if she's 6, she might stand 6 toy dinosaurs together.

Your child can also use her age to solve problems and represent other numbers. How old will she be next year? She would show 7 dinosaurs (6 + 1 = 7). How old was she last year? She should show 5 dinosaurs (because 6 – 1 = 5).

Idea: Have her represent other family members' ages, too. Can she use a box of 36 crayons for Dad's age?

SCIENCE LAB

Design a mini-trampoline



Bounce, bounce, bounce! With this experiment, your youngster will test different materials to make the bounciest trampoline.

You'll need: three identical bowls, plastic wrap, aluminum foil, cloth napkin or dish towel, three rubber bands, small plastic animal

Here's how: Help your child stretch a different material (plastic, foil, cloth) over each bowl to create a flat surface and then secure each "trampoline" with a rubber band. To test his trampolines, he should drop an animal on each one.

What happens? The toy bounces on the plastic-covered bowl but not on the foil- or cloth-covered ones.

Why? The plastic is the best material for the job, since it is stretchy, or elastic. In real life, gymnasts and acrobats jump on trampolines that use elastic material, too.

PARENT TO PARENT

A math walk in the park

My mother-in-law teaches math, and she often gives me good ideas to try with our son Stephen. Recently, she suggested that we take a "math walk." She said I should ask Stephen what he's working on in math, and then we could look for examples outdoors.

On our next trip to the park, Stephen said he was learning about "equal parts." When we stopped for a picnic, he pointed out that our table had four equal rectangles. Then we noticed people playing volleyball, and he said there were two teams of six people each, for a total of 12 people.

During our most recent walk, Stephen told me he's studying symmetry. An object has symmetry, he said, if each side is a mirror image of the other. He spotted a flying flock of geese and realized the "V" was symmetrical, and I saw a symmetrical swing set on the playground.

Our math walks give me a glimpse into what Stephen is learning—and they let him practice his skills in a real-world way.

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 • rfecustomer@wolterskluwer.com
www.rfeonline.com
ISSN 1942-910X