

Math+Science Connection

Beginning Edition

Building Excitement and Success for Young Children

September 2021



TOOLS & TIDBITS

A tower of apples

Here's a simple engineering activity that

also builds spatial reasoning skills. Challenge your youngster to see how many apples she can stack before the tower falls. Can she figure out a strategy that helps them balance? (*Hint:* Remove the stems, and stack every other apple upside down.)



My science poem

Encourage your child to write a poem inspired by the science all around him. A beautiful sunset may lead to a poem about what causes day and night. After watching a squirrel gather nuts, he might write about how animals prepare for winter. Explaining the science in his own words will help him understand it better.

Book picks

Your youngster will double over with laughter as a magic pot multiplies everything by two in *Two of Everything* (Lily Toy Hong). Based on a Chinese folktale.

From a gentle breeze to great gales, your child will discover different ways air moves in *How Does the Wind Blow?* (Lawrence F. Lowery).

Just for fun

Q: What has 100 heads and 100 tails?

A: One hundred pennies!



Playground math

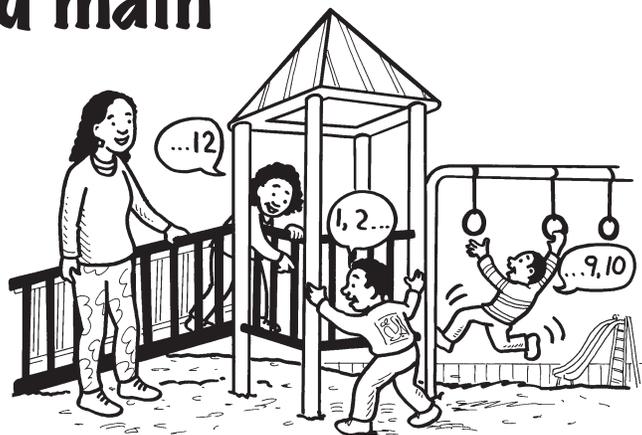
A trip to the playground means fun all around—and math learning, too! Suggest these ideas during your child's climbing, swinging, and sliding adventures.

Count rungs and poles

Encourage your youngster to count the rungs as he swings across the monkey bars or climbs up a ladder. Or he could count poles as he runs and tags them. He can call out each number as he touches a rung or pole—he'll practice matching one number to one object. Point out that the last number he says is the total number.

Explore ordinal numbers

Turn the playground into a math obstacle course. Give your child instructions using ordinal numbers like *first*, *second*, and *third*. Example: "First, climb up the stairs. Second, go across the bridge. Third, slide down the slide." Can he do the steps in the right order? Keep



going, and he'll learn bigger numbers like *fourth*, *fifth*, and even *seventeenth*.

Identify shapes

How many different geometric shapes can your youngster spot? He may notice that the bars supporting the swing set form triangles and a tunnel slide is a cylinder. Ask him to tell you about the shapes' *attributes*, like how many sides the triangle has (3) or what shape is at each end of the cylinder (circle). *Idea:* Your child could draw his own playground, then label the shapes and describe their attributes.

Leaf investigations

Leaves on the ground ... leaves in the trees ... leaves are everywhere for your youngster to observe and compare in the fall. Head outside to explore them together.

● **Name the tree.** Examine leaves on different trees. Encourage your child to count their *points* (pointed tips) or *lobes* (rounded tips). Which tree's leaves have the most? Then, use a library book or a free app to identify the trees.

● **Spot details.** Let your youngster look closely at leaves. What does she notice? She might say insects have nibbled on them or they have lines inside. What does she think the lines, or *veins*, are for? (They carry water and nutrients to the tree.)



Sorting: Practical and fun

Putting items into categories builds your youngster's math and science skills, whether she's learning the difference between hexagons and pentagons or mammals and reptiles. Sort together with these activities.

Find everyday opportunities. Adults sort things all the time without thinking about it—your child can, too! Ask her to help you sort groceries by where they go (refrigerator, freezer, pantry) or recyclables into bins (paper, plastic, cardboard).



Play a "secret rule" game. Have each family member gather several household objects (remote control, earbuds, stapler). Take turns sorting items according to a secret rule.

You might sort by color, size, shape, or material—or something creative you come up with. Maybe your child will put a kaleidoscope, kazoo, and key in one pile and a pizza cutter, pen, and pear in another. Everyone else figures out her rule (same first letter).

The first one to get it right is the next "sorter."

MATH CORNER I know that number!

Recognizing numbers instantly is an important early math skill. Here are two ways to practice.

1. Color by number. You and your youngster can each choose a page in a coloring book or print out a free coloring page online. Write a number, 1–9, in every section of the picture, then make a key telling what color matches each number (1 = purple, 2 = red). Now trade papers, and use the keys to recognize numbers and color your pictures.

2. Search for numbers.

Encourage your child to be a detective and find as many two-digit numbers as possible. She could carry a notepad and pencil around the house and write down

numbers she sees. She might spot 10, 20, and 30 on the dryer dial. Or maybe she'll step on the scale and see 49. When she's finished, have her read the numbers to you.



PARENT TO PARENT

Estimating with oodles of noodles

While we were making dinner last week, my son Victor asked whether a scoop of cooked macaroni would have the same number of pieces as an uncooked scoop. "What a good question," I said, and we set out to discover the answer.

I had Victor measure 1 cup uncooked noodles and count them into piles of 10. He counted by tens and then ones to find the total—83 pieces. Then he measured 1 cup cooked pasta onto his plate. This time, I encouraged him to estimate before counting. He thought it looked like about half as many noodles, so he estimated 42. He was close—there were 56.

Now Victor is wondering if he'll have the same results with different pasta shapes. We decided to try bowtie noodles for our next pasta night so he can find out!



SCIENCE LAB

What rolls? What slides?

With this experiment, your child will test different objects on a ramp to explore how they move.

You'll need: flat surface (cutting board, shoebox lid), items that are round or have curved sides (tennis ball, lemon), objects with flat sides (domino, bookmark)

Here's how: Help your child prop the board against a couch. Ask him to predict which items will roll down the ramp and which ones will slide. He can test his

predictions by letting each one go, one at a time, from the top of the ramp.

What happens? The lemon and the ball roll. The domino and the bookmark slide.

Why? The shape of an object affects how it moves. Things that are round or have curved sides roll. Items with flat sides slide. Can your youngster find objects that will slide and roll depending on how he places them on the ramp?

Hint: Try a crayon or a round drink coaster.



OUR PURPOSE

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

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