

Math+Science Connection

Beginning Edition

Building Excitement and Success for Young Children

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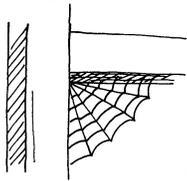
TOOLS & TIDBITS

Hop, skip, jump... repeat

Combine math and fitness by giving your youngster active patterns to follow. *Example:* “Reach up, touch your toes, reach up, touch your toes.” Next, give her a pattern to continue, such as “Jump, jump, twirl, jump, jump, twirl, jump...” She has to pick up where you left off and keep the pattern going (jump, twirl).

Spider web collector

Go hunting for spider webs—and let your child bring some home. When he spots a web, he should first make



sure the spider isn't there. Then, coat a piece of black construction paper with hair-spray. Help him press

the paper against the web until it sticks to the paper. After he collects several webs, he could describe and compare their designs.

Book picks

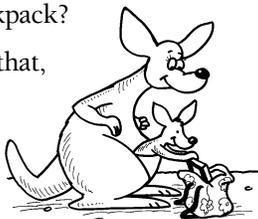
With humorous rhymes, your youngster will practice counting and more in *Grandpa Gazillion's Number Yard* (Laurie Keller).

Alex the polar bear and Zina the penguin live at opposite ends of the earth. So how are they best friends? Find out in *Polar Opposites* (Erik Brooks).

Just for fun

Q: How many books can you put in an empty backpack?

A: One. After that, it's not empty!



Getting to know numbers

This school year, your child will spend a lot of time working with numbers and developing an understanding of how to use them. Show him that numbers are his friends with these fun activities.

Number signs

As you walk, drive, or do errands together, point out numbers to each other.

Have your youngster read them aloud: “Andy's house is at 23 Victory Lane.” “This is grocery aisle 4.” “The speed limit sign says 35.” Encourage him to find as many numbers as he can on each trip.

Dot cards

Draw random arrangements of 1 to 5 dots on paper plates. Flash each plate and ask, “How many dots are there?” When he answers, ask how he knows. Maybe he recognizes the arrangement—“It's like the 5 dots on dice.” Or he may have counted the dots (1-2-3-4-5) or noticed



“subgroups” (2 on the top and 3 on the bottom) and added them ($2 + 3 = 5$).

Puzzle pieces

Tape together 10 craft sticks side by side. Then, let your child cut out a magazine picture, glue it across the sticks, and number the sticks 1–10. Help him cut the picture apart by cutting between the sticks. His job is to assemble the puzzle—by lining up the numbers in order. *Idea:* Remove one stick (7), and ask him what number comes after 6 and before 8.

Write the right time

Your youngster becomes the “clock” in this clever outdoor activity.

Go outside on a sunny day, and have your child raise her arms into 12 o'clock (arms together and straight up). Snap a picture of her arms' shadow. Now, ask her to make a 1 o'clock shadow, and take a photo of that. Let her continue making “hourly” shadows, through 11 o'clock, and capture each one. With every pose, your youngster can say the time out loud.

Next, get prints of the photos, and help her glue each one to paper and write the time below (12:00, 1:00). Shuffle the papers, and use her “shadow clock” times to practice telling time.



Make a nature mobile

Let your youngster create a mobile with objects from nature. Along the way, she'll work on observation, sorting, and balancing weights.

1. Search. Together, gather objects from the ground, such as leaves, feathers, rocks, pebbles, pinecones, and seeds. She'll also need two sticks of about the same length.

2. Observe. Have your child spread out her finds and use adjectives to describe them (*smooth, heavy, tiny, brown*).



3. Sort. Encourage her to group the objects in different ways. She might separate them by size (small, medium, large). Or she could sort them by type, color, shape, or texture.

4. Balance. To make her mobile,

help her use yarn or string to connect the two sticks into an X and then tie it to a tree branch. To attach the objects, she may need to poke holes in them or wrap yarn around them. Encourage her to experiment—she'll have to consider each item's weight and slide it along the stick to make her mobile balance.

SCIENCE LAB It's a liquid, it's a solid!

It's squishy, it's squooshy, and it's science. When your child makes "oobleck," he'll be able to see matter change before his eyes.

You'll need: cornstarch, measuring cup, bowl, water, mixing spoon, measuring spoon, food coloring, container

Here's how:

Have your youngster measure 1 cup cornstarch into a bowl and stir in water, 1 tbsp. at a time, until the mixture is thick. He can add food coloring to make it a fun color. Now let him experiment: He could squeeze the oobleck through his fingers, roll it into a ball and toss it, put it into a container and shake, and pour it into a bowl and slap his hand against it.



What happens? It will change from liquid to solid and back again.

Why? Oobleck is a *non-Newtonian fluid*. It acts like a liquid when poured, but like a solid when a force acts upon it.

Fun fact: The name comes from a Dr. Seuss book, *Bartholomew and the Oobleck*, where it rained a gooey substance.



MATH CORNER Tape the shape

Make shapes big enough for your youngster to jump in, and he'll get a life-size geometry lesson.

On a floor or sidewalk, use masking or painter's tape to create big squares, rectangles, and triangles. Then, try these activities:

- Take turns calling out the name of a shape. The other person jumps into it.
- Let your child use a straw to blow a cotton ball along the lines of each shape. He can count the sides and vertices (corners) as he goes.
- Find household objects that match each shape, and put them inside. For example, a potholder could go in a square, and a picture frame might go in a rectangle.



Q & A What's changed in math class?

Q: *The math that my daughter is doing seems so different from what I did at her age. Can you explain?*

A: Today's math calls for students to develop a deeper understanding of concepts and strategies. That is, they have to not only know the answers but also understand how they got them. Your youngster might be asked to draw pictures and use math words to explain her

thinking. Plus, she'll be solving more real-world problems or looking at data so she can identify patterns.

The methods she's being taught may seem complicated—but that's because her teacher wants her to do more advanced

thinking! If your youngster doesn't understand her homework, ask what part she *does* understand, or have her explain a simpler problem that she "gets." Then, encourage her to ask her teacher for help the next day.



OUR PURPOSE

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

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