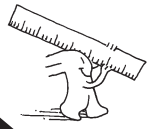
Beginning Edition

Math+Science Connection

Building Excitement and Success for Young Children

April 2018

Ellendale Elementary School



TOOLS & TIDBITS

Think before you roll

Your child will practice thinking like a mathematician with this game. Each player lists the numbers 1–12 on his paper. Take turns rolling either 1 or 2 dice, and cross out the number rolled. If he only has the number 8 left, how many dice should he roll? That's where the strategy comes in. The first person to get every number wins.

Changing seasons

How are winter and spring the same and different? Encourage your youngster to compare the seasons by drawing a Venn diagram with one circle labeled "Winter" and the other "Spring." The shared part in the center is for both. She might draw icicles in the winter circle, flowers for spring, and rain in the middle.

Web picks

Have a soccer shootout, race cars, or play tic-tac-toe with math problems at *funbrain.com/numbers.html*. Adjust the game levels to match your child's growing skills.

Your youngster will learn all about animals at *switchzoo.com*. Activities include building a habitat and listening to animal sounds.

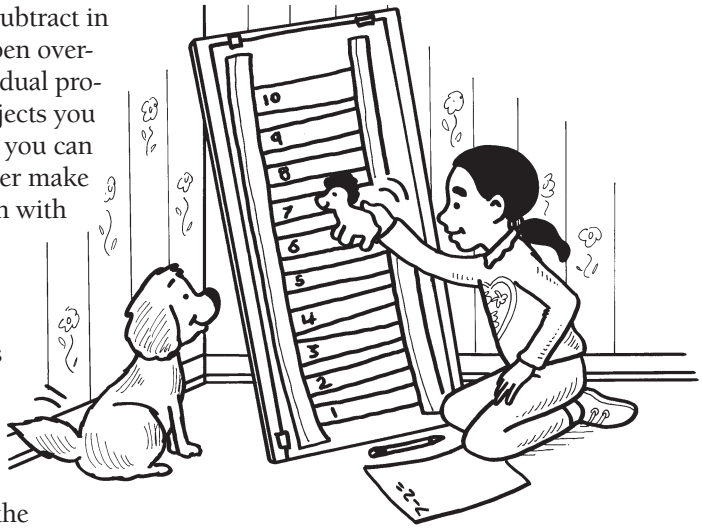
Just for fun

Q: When I point up, it's bright. When I point down, it's dark. What am I?

A: A light switch!

Steps to mental math

Learning to add or subtract in your head doesn't happen overnight. Instead, it's a gradual process that starts with objects you can touch and pictures you can see. Help your youngster make her way to mental math with these steps.



Step 1: Use objects.

Let your child draw a ladder with the rungs numbered 1–10 for a small toy to "climb" up and down. Then, say a problem, such as 7 – 2. Have her put the toy on the rung labeled 7 and make it climb down 2 rungs. What number did she land on? (5) That's her answer!

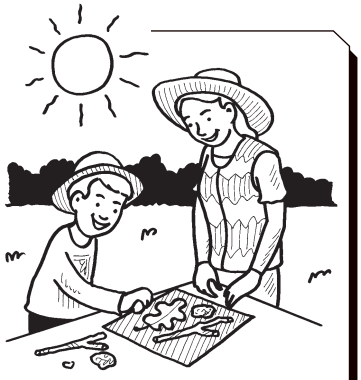
Step 2: Draw a picture.

Give your youngster another problem (4 + 5), and encourage her to sketch or paint a picture to find the solution. For example, she might paint 4 blue butterflies and 5 yellow butterflies and say, "There are 9 butterflies in all."

Step 3: Visualize it.

To imagine and solve a problem in her head, your child could start with small numbers, perhaps 3 + 1. Have her picture her toy climbing a ladder, starting on 3 and counting 1 more rung (*answer:* 4). Or she could make a "drawing" in her mind. Give each other different kinds of problems and use bigger numbers as she gets more comfortable with mental math.

Fun with sun prints



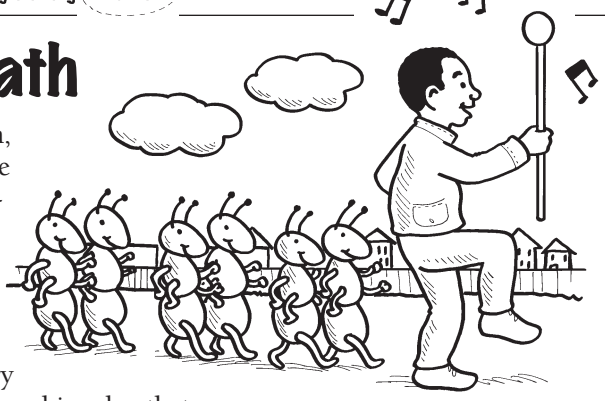
Here's a science project that's powered by the spring sunshine!

Have your child gather objects from the ground (leaves, twigs, rocks). Then, he can place one piece of black construction paper in the sun and another in the shade, and arrange a few items on each paper.

Check back in 3–4 hours. When your youngster removes the objects, he'll see the paper left in the sun is lighter in the areas that weren't covered up. That's because the items blocked the sunlight, keeping it from bleaching the paper. The paper in the shade stayed the same because there was no sunlight to bleach it.

Idea: Your child's project can be a puzzle, too! Put the objects in a bag, and have him pull out one at a time and match them up with their sun prints.

Sing a song of math



"The ants go marching 2 by 2, hurrah, hurrah…" Many children's songs include numbers, making them ideal for practicing counting out loud. Try these musical activities with your youngster.

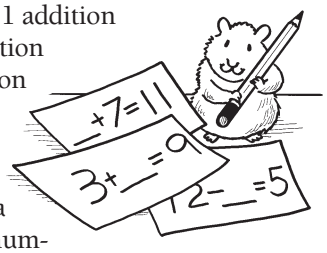
Sing and clap. Ask your child to choose a counting song like "The Ants Go Marching" or "Hickory Dickory Dock." Whenever he sings a number, have him clap that many times. That means he gets to clap once after singing "The clock struck 1" and 12 times for "The clock struck 12."

Pick new numbers. Substitute more challenging numbers for the ones in a song. Your youngster might sing "One Hundred Little Monkeys" instead of "Ten Little Monkeys" and count backward by 10s ("10 fell off and bumped their heads…90 little monkeys jumping on the bed"). Or name a random number to start with in a song like "This Old Man" so he can *count on* from numbers other than 1. ("This old man, he played 17…")

Make your own. Turn regular songs into counting songs by putting numbers into the lyrics. For example, the passengers in "The Wheels on the Bus" could count ("The people on the bus count 1, 2, 3…") or skip count ("2, 4, 6…").

MATH CORNER Be a math detective

Help! Some numbers are missing! Your youngster can use early algebra skills to find them.



Write 11 addition or subtraction problems on separate index cards, but leave a different number from 0 to 10 missing from each problem. Vary the locations of the missing numbers (3 + __ = 9, __ + 7 = 11, 12 – __ = 5).

Next, ask your child to number 11 clothespins, 0–10. While she closes her eyes, hide them around the house or yard. To play, have her search for the clothespins and clip them into the correct spots in the math problems. She might use small objects, such as marbles, to help her solve them. For 8 + __ = 10, she could count 8 marbles and then count to see how many more she'll need to equal 10 (*answer:* 2).

OUR PURPOSE

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

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SCIENCE LAB The harder you push…

When your child pushes a wagon, it moves forward. But how far can she make it go? With this experiment, she'll see the relationship between force and motion.

You'll need: sidewalk chalk, wagon or another toy with wheels, measuring tape, paper, pencil

Here's how: On a flat sidewalk, let your youngster draw a starting line with chalk and place the wagon behind it. Then, have her push the wagon gently. She can draw a line where it stops and label the line "1." Ask her to repeat this several times, pushing the wagon harder each time. Finally, help her measure each distance and record the results on paper.

What happens? The harder your child pushes the wagon, the farther it moves.

Why? A push is a force. The energy from that force transfers to the wagon. The more force used, the more energy transferred, and the farther the object will travel.

Q & A Everyday measuring

Q: *My son is learning about measurement in school, and he wants to measure things at home, too. I love his enthusiasm—any ideas?*

A: It's great that your child likes to measure. Luckily, it's easy to make measuring a part of his daily life.

Appoint him the "measurer" when you cook. Let him use measuring cups and spoons, and encourage him to say the measurement's name. *Example:* "Here is $\frac{1}{2}$ *cup* of flour."

When you finish dinner, ask your youngster to put away leftovers. He'll learn about volume (the space taken up by something) as he decides which container to use for leftover rice.

Another idea is to help your son make his own "ruler." Trace his hand on a piece of cardboard, and cut it out. Then, he can use his "hand ruler" to measure household items. The coffee table might be 17 hands long and 8 hands wide, for example. Encourage him to measure everything from the vacuum cleaner to his little brother!