

Math+Science Connection

Beginning Edition

Building Excitement and Success for Young Children

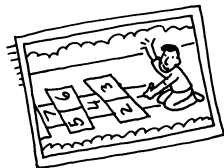
September 2014



TOOLS & TIDBITS

See me do math!

You probably take pictures of your child playing soccer or performing in a school play. Try snapping a picture of him using numbers (drawing a hopscotch board, for example) or holding up a math project. Display the photo, and he'll see that you value his math abilities, too!



Observing seasons

When you read storybooks aloud, encourage your youngster to identify the seasons shown. What clues can she find? ("Snow is falling, so it must be winter.") In some books, she might also see evidence of changing seasons, such as leaves turning color or birds building nests.

Book picks

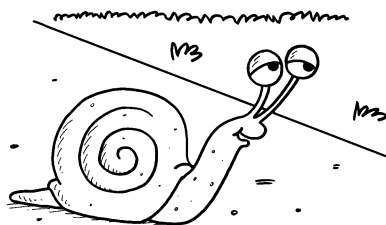
▣ *Wild Fibonacci* (Joy N. Hulme) is an introduction to a fascinating pattern of numbers found in nature.

▣ Your child can learn about the last of the saddleback tortoises, who lived to be 100, in *Galapagos George* (Jean Craighead George).

Just for fun

Q: Why did the snail cross the road?

A: I don't know—he hasn't reached the other side yet.



Counting games

Teachers know that playing games is one of the best ways for children to build math skills. Extend the fun to home with these two counting games.

Stop and go

1. Ask your youngster to make a sign with "Stop" on one side and "Go" on the other. Choose a number to count to (say, 25), and give one player the sign to hold. Begin counting, one number per person.
2. At any time, the sign-holder can flash "Stop" to halt the counting. Then, she flips the sign to "Go" and chooses someone to start counting where the last person left off. Say the wrong number, and you're out. Play until one person is left or you reach the target number.

Ideas: Begin with a different number like 7, 19, or 81. Skip count by 2s, 3s, 5s, or 10s. Or add a U-turn sign—hold it up, and players switch to counting backward.



Rockets in the sky

1. Have each player draw a picture of the solar system.
2. Roll two dice, count the dots, and draw that number of rockets in your picture (roll 6, and draw 6 rockets). Record the numbers as you go. After five rounds, add the numbers, and count your rockets to check. The person with the most is the winner.

Idea: Change the game board to match your child's interests. For instance, draw a beach scene and add starfish for each number rolled. 🐞

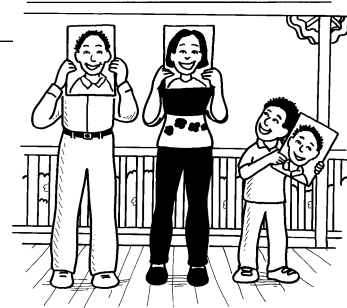
Mom's eyes, Dad's nose

Is your child used to being told, "You look just like your dad"? Help him understand *why* he looks like his parents with this activity.

First, let him draw a picture of you. Encourage him to include details like hair color, eye color, curly or straight hair, freckles, dimples, and attached or detached earlobes. Then, he can look in a mirror and draw a self-portrait, paying attention to those same features.

Which ones are the same? You can explain that those are traits he *inherited* from you—they were passed from you to him!

Tip: Suggest that he draw pictures of other family members. Which trait is shared by the most people? 🐞



Creating glyphs

Here's a clever way for your youngster to gather and represent data: He and his friends can make *glyphs*. (Note: Glyphs are a way to display information with a picture.)

Start by thinking of an object to draw, perhaps a house. Then, brainstorm a list of questions, and make up directions for the answers. For instance:

- How many arms are in your family? Put that number of windows on your house (4 family members = 8 arms = 8 windows).
- How many digits are in your address? Add that number of trees to your yard (3-digit address = 3 trees).



Then, come up with a new object (scarecrow, football field), and start another round of data collection and glyph-making. *Idea:* Look for glyphs in real life. For example, your youngster's dentist may mark baby teeth or cavities on a picture of teeth.

- Does your middle name have an even or odd number of letters? (Even = a red door; odd = a black door)
- What date of the month is your birthday? (1st to 15th = a chimney; 16th to 31st = no chimney)

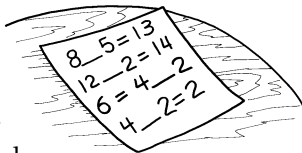
Let each child tell the story of his glyph. Or mix up the papers, and have the children identify whose is whose.

MATH CORNER

The case of the missing operator

While waiting at a restaurant or in a doctor's office, or just hanging out at home, enjoy some "math mysteries" with your child. Guess what? She'll be working on early algebra skills!

Think of an addition or subtraction problem ($8 + 5 = 13$). Write it down, but leave out the *operator* (the addition or subtraction sign) so it looks like this: $8 _ 5 = 13$.



Your child has to figure out what symbol goes in there. (*Hint:* Suggest that she sketch the problem by drawing circles for the numbers.) After she writes the correct sign, she can give you a mystery problem to solve.

Variations: Put the equal sign in a different spot: $29 = 32 _ 3$. Or make the problem harder by leaving out the operator *and* the equal sign.

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
540-636-4280 • rfeustomer@wolterskluwer.com
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SCIENCE LAB

Push it gently, push it harder

When your youngster pushes a friend on a swing or pulls a door open, she is exerting *force*. Let her learn more about these forces with this experiment.

You'll need: large cardboard box, books, yardstick or tape measure, rope

Here's how: Put the box on a smooth floor, and have your child give it a gentle push. Help her measure how far it went. Ask her to push it harder, and measure again. Next, fill the box with books, push twice (gently, then hard), and measure each time. Now it's time to pull the box. Punch a hole in it, and insert a rope. Have her repeat the steps (pull gently and hard, add books, and pull again).

What happens? The harder the push, the farther the empty box goes. The harder the pull, the faster it moves. In either case, adding weight makes it more difficult to move the box.

Why? Pushes and pulls control the distance and the speed that objects move. Heavier objects (those with more mass) need more force to move.



PARENT TO PARENT

Mix and play

At back-to-school night, our son's teacher gave us lots of good ideas for working on math and science at home.

We've tried several of her suggestions. So far our favorite one was making our own play dough. Mixing up the recipe let Jason work on measuring ingredients. And then, like Mrs. Wilson suggested, I had him think about "cause and effect" by

adding more or less of an ingredient to see what would happen. After a few batches, he decided on his "best recipe."

Here it is: Mix together 2 cups flour, 2 cups warm water,

1 cup salt, 2 tsp. vegetable oil, 1 tsp. cream of tartar, and a few drops of food coloring. Stir over low heat until thick. Cool. (If it's too sticky, just cook longer.)

