

Math+Science Connection

Beginning Edition

Building Excitement and Success for Young Children

January 2017



TOOLS & TIDBITS

Assorted sorting

Sorting helps your child develop math skills as he matches and organizes objects. Let him cut out pictures from old magazines and group them into a collage. He might classify pictures of toys or furniture by color or number, for example. Ask him how he organized his pictures—and how else he could sort them.

Fun with senses

Your youngster can practice using her senses with this game. Pair each sense to a number on a die: 1 = sight, 2 = hearing, 3 = taste, 4 = touch, 5 = smell, 6 = your choice. Then, take turns rolling and calling out examples. Say she rolls a 5. What does she smell? Maybe it's popcorn in the microwave, or her cat's litter box!



Book picks

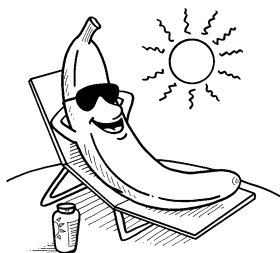
Learn about the incredible talents of a math whiz in this picture book biography, *The Boy Who Loved Math: The Improbable Life of Paul Erdős* (Deborah Heiligman).

The rhyming story *Amy's Light* (Robert Nutt) explains how a little girl's encounter with fireflies helps her learn about nature and overcome her fear of the dark.

Just for fun

Q: Why do bananas use sunscreen?

A: Because they peel.



Find the missing number

On pirate maps, x marks the spot for treasure. In math, x marks the spot for a missing number. Guide your child toward finding the missing numbers with these early algebra ideas.

Equal or not

At the playground, talk about *equal* and *not equal*. For example, you might say, "Two children are on the swings, and 3 children are on the monkey bars. Is that an equal number of kids?" Then, ask, "What would make the numbers equal?" (Add 1 child on the swings because $3 = 3$, or take away 1 child from the monkey bars since $2 = 2$.)

Paper-plate math

Have your youngster draw lines on a paper plate to make one large section and two smaller ones. She could put some pennies in each small section (say, 4 pennies in one section and 5 in the other). In the large section, let your child supply the "missing number" that they add up

to (9 pennies, since $4 + 5 = 9$). Or place 6 pennies in the big section and 4 pennies in a small one. How many pennies would go into the other small section to make $4 + x = 6$? ($x = 2$ pennies)

Block tower

Suggest that your youngster build a block tower using two different colors. Now, ask a missing-number question like "I see 9 blocks in your tower. Three are red, and the others are blue. How many blocks are blue?" She can count the blue blocks to find the unknown number (6) and tell you the subtraction sentence: $9 - 3 = 6$.

Poetry rocks

Let your youngster turn a pile of rocks into a poem! Here's how.

Take a rock walk. Get started by having your child gather various rocks. Encourage him to choose ones that are different colors, sizes, textures, and shapes.

Discuss your finds. Ask questions to help your youngster describe his rocks. How do

they feel when you touch them (smooth, rough)? What colors are they (gray, white)? Help him jot down the words he uses.

Write a poem. Now he can turn his words into a poem about his rocks. *Example:*

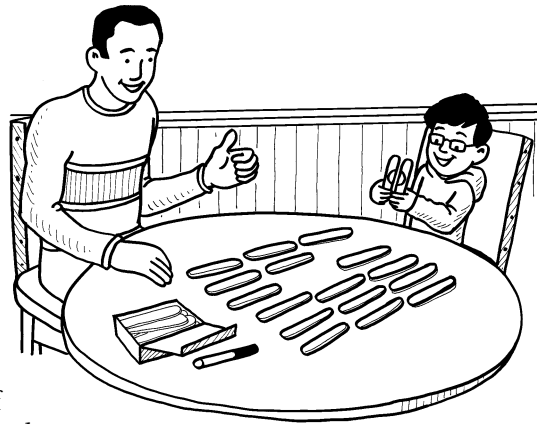
My rock is gray
Like a rainy day.
But that one is white.
It's smooth and bright.



Let's make some shapes


Circles, squares, rectangles... with these hands-on activities, your child can enjoy making, building, and finding these shapes and more.

Split in two. Together, make a shape-matching game. Lay two craft sticks side by side, and draw half of a shape on each one. Repeat with more pairs of sticks. Then, place them all facedown. Take turns picking two at a time. If they match, keep them. If not, flip them back over. Make the most matches to win the game.



Your youngster will see that shapes may be divided in half and put back together again.

Build up. Ask your child to cut out four squares and four triangles from construction paper. Can he use them to create larger shapes? For instance, he might line up four squares to make a rectangle or form a square from two triangles. He'll start to understand how small shapes will create bigger shapes.

Give clues. Help your youngster draw shapes like a circle, a square, and a pentagon on separate pieces of paper. Let him place them around your family room. Then, have him give you clues to pick the right one. He might say, "Find the shape that has four equal sides and four corners" (a square). Can you find them all? Now, switch places, and give him clues. 

SCIENCE LAB

Ice on a string

This experiment will show your youngster how to lift an ice cube with only a piece of string—right before her very eyes.


You'll need: glass, water, ice cubes, string, salt, timer, measuring spoon

Here's how: Help your child fill a glass $\frac{3}{4}$ full with water and add three ice cubes.

Across the top of the glass, have her lay a length of string that touches one cube. Then, she should sprinkle 1 tsp. salt on top of that cube. After one minute, let her pick up the string by both ends.



What happens? The ice cube lifts along with the string!

Why? The string froze into the ice cube. That's because the salt—which lowers the freezing point—melted the cube a little, and the string settled into the small puddle created. During the minute she waited, the other cubes and water stayed cold enough to refreeze the melted part, and the string was sealed inside. 

Q & A


One to one

Q: During math night at our school, my daughter Sammie loved the one-to-one-correspondence table.

What could we do at home to play with this more?

A: One-to-one correspondence is about partnering each number with an object—practicing it helps children understand that counting has meaning by connecting a number to the item counted.

Try these everyday suggestions:

- While taking a walk, have your child count each sidewalk crack as she steps or jumps on it.
- As you're doing paperwork, let her count a pile of paper clips out loud, saying one number for each paper clip.
- When she sets the dinner table, your youngster could count the number of forks, spoons, or salad bowls she puts down for each person. She'll be learning—and helping around the house. 



MATH CORNER

Comparing edible dominoes

With these number comparison activities, your child can have his math and eat it, too!


First, let him make his own edible dominoes. Have him break apart graham crackers into four rectangles each. Help him add a thin line of icing or cream cheese down the middle and then dab 0–6 dots of icing or cream cheese on each half. Now try these ideas.

Less on the left

If there are 2 dots on one side and 5 on the other, which side has the

smaller number? Ask him to line up his dominoes so the smaller numbers are on the left.

Greater gets the win

Your youngster deals the same number of dominoes to each of you. Then, you each pick one and turn it into an addition problem to solve. For instance, a domino with 3 dots and 4 dots would be $3 + 4 = 7$. Compare your sums. Whoever has the greater number gets to keep (or eat) both. 



OUR PURPOSE

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

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