

# Math+Science Connection

Beginning Edition

Building Excitement and Success for Young Children

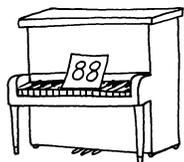
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## TOOLS & TIDBITS

### By the number

Label items in your house with “number sticky notes.” For instance, put “2” on a set of cabinet doors, “10” on a box of instant oatmeal packets, or “88” on the keys of a piano. Ask your child to read the numbers and say what they represent (“2 doors”). Then, he can label items of his own.



### What's next?

Encourage your youngster to color pictures showing how things happen in order in nature. For example, she could draw a green, a yellow, and a brown banana. Or point out a bare tree or brown grass, and ask her to draw what will happen next season. (Leaves will grow, the lawn will turn green.)

### Book picks

How can three mice use shapes to hide from a cat that wants to catch them? Find out in *Mouse Shapes* (Ellen Stoll Walsh).

*Your Fantastic Elastic Brain* (JoAnn Deak) explains how the brain works—and how learning new things stretches it.

## Just for fun

**Teacher:** Amanda, name four members of the frog family.

**Amanda:** Mother, father, sister, brother.



## Make that number

Does your youngster understand that numbers can be put together and taken apart in various ways? Use these clever activities to practice this at home—it's what teachers call *composing* and *decomposing* numbers.

### In or out?

Ask your child to draw a large circle on paper. Then, have her drop a handful of buttons over it and count how many fell inside and outside the circle. For instance, there might be 5 buttons inside and 2 outside. Let her say the total (7) and write the number sentence ( $5 + 2 = 7$ ). After dropping the buttons a few more times, she'll find different ways to *compose* the number 7.

### "I wish I had..."

When she's playing with her dolls or stuffed animals, “talk” for her doll and say, “I have 2 shirts. I wish I had 5. How many more do I need?” To find the answer, your youngster could take 2 shirts from her drawer and then count more shirts until she gets to 5. That will



show her what number (3) she needs to add to 2 to make 5. Take turns giving each other more “I wish I had” problems.

### Build a bracelet

Let your child thread 9 beads (all the same color) onto a pipe cleaner or piece of yarn to make a bracelet. She can wear the bracelet and slide the beads to show you the various ways to make 9. For example, she might move 6 beads to one side and 3 to the other. Or she could slide beads to represent  $4 + 5$ ,  $7 + 2$ ,  $8 + 1$ , or  $9 + 0$ . *Idea:* Have her make more bracelets for numbers up to 20.

## Weighing in

When you go grocery shopping, encourage your child to compare weights as you pick out fruits and vegetables together:

- Ask him to select two items and weigh each one. For instance, he might choose an eggplant and a butternut squash. Help him read the weights in *ounces*, *pounds*, or *kilograms*. Have him tell you which is *heavier* and *lighter*. Using those words will get him used to the vocabulary of measurement.

- Challenge your youngster to find something heavier than the squash (say, a melon) and lighter than the eggplant (lettuce). Could he find something that weighs in the middle? Finally, see if he can find two items that weigh the same.



# Roll the ice

Turn an ice cube into a puddle with this game that tests the best ways to melt ice.

**Materials:** ice cube on a plate for each player, die, bowl of cold water, bowl of warm water, salt, measuring spoon, paper, pencils

The object is to melt your ice cube the quickest. First, decide on instructions for each roll of the die. For example:



- **Roll a 1:** Put your ice cube in cold water for 30 seconds.
- **Roll a 2:** Put it in warm water for 30 seconds.
- **Roll a 3:** Blow on your cube twice.
- **Roll a 4:** Pour  $\frac{1}{4}$  tsp. salt on it.
- **Roll a 5:** Put it back in the freezer for 30 seconds.
- **Roll a 6:** Squeeze your cube for 30 seconds.

## SCIENCE LAB

### Red + blue = ?

Creating a “real” color wheel is a fascinating way to learn about primary and secondary colors and about absorption.

**You’ll need:** 6 clear glasses, 6 paper towels, scissors, water, food coloring (red, blue, yellow)

**Here’s how:**

Ask your child to fill 3 glasses with water and color one red, one blue, and one yellow. Then, have her arrange all 6 glasses in a circle, alternating filled and empty ones. Help her roll up the paper towels and place one end of each into adjacent cups. *Note:* Cut the paper towel strips so they just touch the bottom of the glasses.



**What happens?** The colored water will travel up the paper towels and combine in the empty glasses to create new colors (purple, green, orange).

**Why?** The paper towels absorb the colored water and transfer it into the empty glasses. There, the primary colors combine to form secondary colors. *Tip:* Suggest that your youngster make a chart showing the combinations (red + blue = purple, yellow + blue = green).



Then, take turns rolling the die and following the directions. Write down your actions, and see whose cube melts first. *Variation:* Play so the winner is the person whose ice cube is the last to melt.

*Real-world tip:* Point out that road crews spread salt on icy roads. After seeing how salt speeds up melting in this game, your child will understand why!

## PARENT TO PARENT

### Fill a math basket

When I was volunteering in my son’s classroom, I noticed the children using bins with math tools. That gave me an idea to put together a “math basket” for Timmy to have at home, too.

Timmy and I gathered up pencils and paper, a tape measure, a ruler, and coins. I added “counters” like macaroni noodles and stickers. I also made copies of number charts and number lines from his math folder so he could practice writing and working with numbers.

Then, we wrote addition and subtraction problems on index cards. Timmy pulls out a card, uses counters to solve it, and writes the answer on the back. He likes having his own math basket, and it’s great to see him enjoying math on his own.



## MATH CORNER

### Symmetrical me

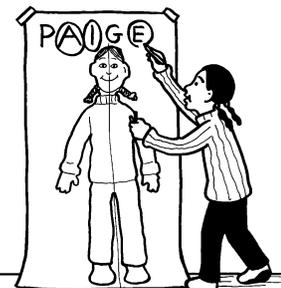
Introduce your youngster to symmetry with this idea that she’s bound to like because it’s all about her!

Have your child lie faceup on a large sheet of newsprint or poster boards taped together. Use a pencil or marker to outline her body. Then, let her color in “herself.”

When she finishes, help her use a ruler and pencil to draw a vertical line down the center of her body. Where do the two sides match? As she names them—eyes,

ears, dress pattern, for example—you can explain that these halves are symmetrical. That means they are mirror images of each other.

*Idea:* Ask your youngster to write her name in uppercase letters on her cutout and find and circle the letters that are symmetrical. Suggest that she draw a line down the center vertically or across the center horizontally—the letters could be symmetrical either way. For instance, Paige would circle A, I, and E.



## OUR PURPOSE

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

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