

Math+Science Connection

Beginning Edition

Building excitement and success for young children

April 2010

Sparta Area Schools
Southside School

TOOLS & TIDBITS

Size and shape

Choose two containers that are the same size

(1 cup or 1 quart, for example) but shaped differently. One might be tall and narrow, the other short and wide. Let your child fill each with marbles (all the same size) and count the totals. He might be surprised to discover that both hold about the same number.

Oil and water

Show your youngster that oil and water won't mix, no matter how hard she tries. Have her add a spoonful of vegetable oil to a glass of water and stir until the oil begins to break up into drops. When she stops stirring, the oil will rise to the top. Explain that oil won't dissolve in water, so the liquids stay separate.

Web picks

Match halves to make wholes, put ordinal numbers in order, and line up sports players from tallest to shortest. At www.abc.net.au/countusin, youngsters will find fun ways to practice math.

Games, activities, and facts help children explore gardens, rivers, animals, and more at <http://urbanext.illinois.edu/kids/index.html>. Some parts are available in Spanish, Chinese, and Korean.

Worth quoting

"If we did all the things we are capable of, we would astound ourselves."

Thomas Edison

Just for fun

Mama Bear: Time to wake up!

Baby Bear: Why?

Mama Bear:
It's half-past
April!



Let's play math!

Playing math games is a great way for your youngster to build math skills—and to see that math is fun. Here are ideas for putting math into playtime.

Number match.

Together, write the numbers 1–10, one per card, on index cards. On 10 other cards, your child can draw pictures to match (1 heart, 2 stars, 3 houses). Mix up the cards, and lay them facedown in rows of four. Players turn over two cards at a time. If the number and pictures match (the number 2 and the picture of 2 stars), keep the cards. If not, turn them back over. Play until all the cards are matched. *Variation:* Instead of numerals, write math problems ($4 - 1$) and matching pictures (3 soccer balls).

Carton addition. Give each player a clean, empty egg carton and 12 buttons. With a pen, label the sections in the cartons 2–12 (leave one blank). To play, take turns rolling two dice and adding



the numbers together ($2 + 4$). The player puts a button in the number that matches the sum (6). The free space can be used for any number. The first person to fill her carton wins the round.

Triangle trick. Help your child cut out 25 triangles (with equal sides) from construction paper. Draw lines to divide each triangle into three smaller triangles, and randomly write a number from 0 to 9 in each one. Then, use the triangle cards to play games. Younger children could lay the cards side by side so matching numbers touch (3 next to a 3). For older children, take turns joining sides that equal 9 (example: put a 5 next to a 4). Say each problem out loud ($5 + 4 = 9$).

Science field trips

No matter where you live, science is right around the corner. Explore science as a family with outings like these:

● Help your child learn about crops and animals by visiting a farm. He might be able to pick fruit (strawberries, peaches), watch cows being milked, or see animals like chickens, goats, or pigs. *Note:* Call your county extension service or look online for a farm that welcomes visitors.

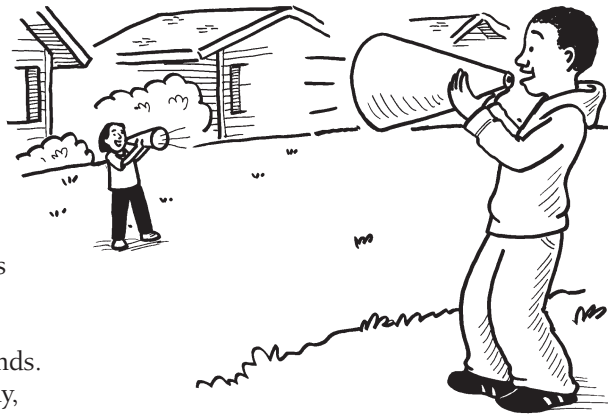
● Tour a recycling center or landfill. Before going, ask your youngster where he thinks trash goes when it leaves your house or what kinds of materials can be recycled. As you tour, he'll learn the answers.



Sounds good!

People talking... music playing... dogs barking... your youngster is surrounded by sound. Use these activities to help him understand the science behind the sounds he hears:

1. Ask your child to touch the front of his neck while he hums a tune. He'll feel his vocal cords *vibrating* (moving back and forth). Tell him that vibrations make sounds. Suggest that he say his name softly, loudly, high, and low. How do the vibrations change?



2. Let your youngster stretch plastic wrap tightly over a glass or plastic bowl and sprinkle salt on top. Then, have him stand nearby and tap a cookie sheet with a ruler or plastic spoon. He'll see the salt bounce around. Explain that vibrations travel from the cookie sheet to the bowl—the way sounds travel to reach his ears.

3. Help him tape a sheet of construction paper into a cone shape (small hole at one end, large hole at the other). Take turns talking through the megaphone while pointing it in different directions. What does your child notice? (The cone shape moves sound in a certain direction.) Can he think of other ways to direct sound? *Examples:* whisper in someone's ear, use headphones to listen to music.

SCIENCE LAB

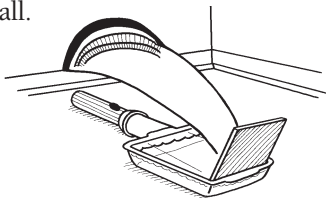
Make a rainbow

"Look, Mom! There's a rainbow!" When a rainbow appears in the sky, it's a magical moment. Let your youngster create her own rainbow—and learn what causes the magic.

You'll need: glass pan, water, small mirror, flashlight

Here's how: Have your child fill the pan with water. Help her stand the mirror in the water at an angle against the edge. Let her turn the lights off and shine the flashlight through the water onto the mirror.

What happens? A rainbow appears on the wall.



Why? As the light enters and leaves the water, it reflects (bounces back), refracts (bends), and separates into the colors of the rainbow. After a rainfall, light hits water droplets in the air, bounces back, and bends. This process causes the colors in sunlight to separate so we can see all of them. See if your child can name the colors (red, orange, yellow, green, blue, indigo, violet).



MATH CORNER

Pennies, nickels, and more

Playing with loose change is a good way to teach your child what different coins are worth. Try this activity.

Put a pile of change in the middle of the table. Show your youngster each coin. Say its name and how much it is worth: "A penny is 1 cent." "A nickel is 5 cents." "A dime is 10 cents." "A quarter is 25 cents."

Have your child roll a die and say the number out loud (*example:* 3). She takes that number of pennies (3 pennies). Then, you take a turn. When someone has 5 pennies, she can count the pennies (1, 2, 3, 4, 5) and trade them in for a nickel. When a player has a nickel and 5 more pennies, she can count the coins (5, 6, 7, 8, 9, 10) and trade them in for a dime. Who can be the first to trade in 2 dimes and 5 pennies for a quarter?



PARENT TO PARENT

In order

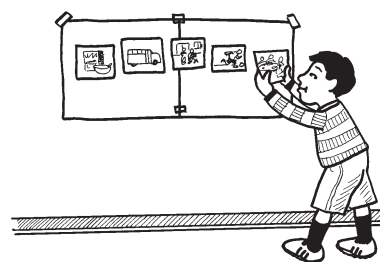
At our parent-teacher conference, the teacher said Dylan was having trouble putting things in order. She said these "sequencing skills" are important for math, science, reading, and writing. So she recommended ways we could help him practice.

Since Dylan likes art projects, she suggested that we have him illustrate his day in order. He cut out pictures from old magazines of things like a cereal box, school bus, classroom, and

baseball game. Then, he glued them in order across a poster board. I had him use his poster to tell me the story of his day from morning to night.

His teacher also said to look for ways for Dylan to count numbers in order.

When we're in an elevator, I have him say the floor numbers we pass. And at home, he counts steps by twos (2, 4, 6) as he walks up or down. He's enjoying the activities—and I think he's getting the hang of it.



OUR PURPOSE

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

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