Beginning Edition

Math+Science Connection

Building excitement and success for young children

January 2010

Gearing Elementary School

TOOLS & TIDBITS

How many wheels?

Your child can practice counting and comparing by looking for objects with wheels. In the car or on walks, have her count the wheels on bicycles, strollers, cars, and trucks. Ask her where she sees the biggest wheels (perhaps a dump truck) or the smallest ones (maybe a stroller).

Science museums

Head to a local natural history museum, planetarium, or aquarium to give your youngster a firsthand view of the world of science. Check newspaper listings or museum Web sites to find out about children's rooms and current exhibits.

Book picks

Imagine if a penguin arrived at your house on New Year's Day—and every day the rest of the year. That's what happens in *365 Penguins* (Jean-Luc Fromental). Read how the family uses math skills to sort, feed, and care for the growing group.

It takes energy to play ball, cook a hot dog, and fly a kite. Help your youngster learn about different types of energy in *Energy Makes Things Happen* by Kimberly Brubaker Bradley.

Worth quoting

"Treat the earth well. It was not given to you by your parents; it was loaned to you by your children."
Native American proverb

Just for fun

Teacher: Where do you find zebras?

Student: I don't know. Where did you leave them?

Learning to subtract

"Mom, there were five cookies in the jar. Now there are only two. Who ate the other three?"

"Sam, you just did a subtraction problem!"

With simple questions like that, your child is using subtraction. Help him practice this important everyday math skill with these ideas.

Eat and subtract

Snack time is a perfect opportunity for subtraction as his mouth "takes away" items when he eats. Try this with small snacks like grapes or crackers. Have him count the total number on his plate. When he eats, he can count again and do the math problem: 9 crackers – 1 cracker = 8 crackers.

Count backward

Help your youngster make a number line to practice subtraction. Have him write the numbers 1–20 on a long strip of paper. Give him a problem, such as 16 – 2 = ? Show him how to put his finger on 16 and count backward by 2. When he lands on 14, that's the answer! Then, let him give you a problem.

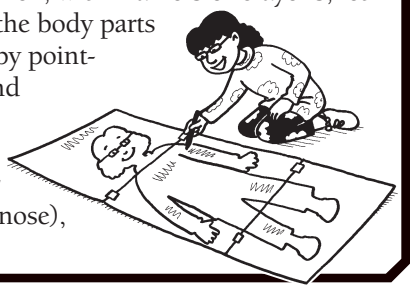
Go bowling

Make subtraction into a bowling game. Set up 10 empty water bottles (add a little rice to weigh them down). Take turns rolling a small ball to knock down the pins. Say your child knocks down three. Ask him to count the ones still standing and to say the subtraction sentence out loud ("Ten minus three equals seven"). *Idea:* Have him write the problem, too (10 – 3 = 7).

My body

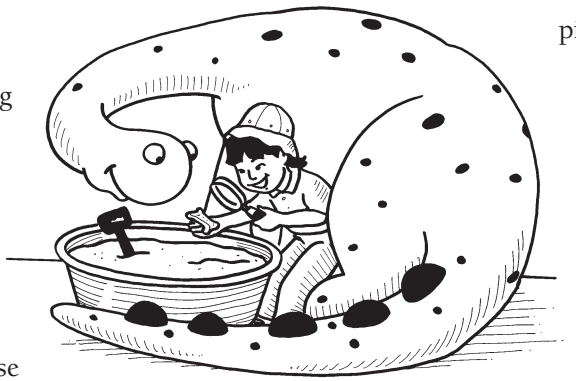
How many body parts can your youngster name? Find out with this activity.

Tape together several large poster boards, and have your child lie down on top of them. Trace around her body with a pencil. Then, with markers or crayons, let her draw her face and write in the names of all the body parts she knows (arm, foot, ear). Help her add more by pointing to areas on your body (chin, wrist, ankle) and asking, "What is this called?"



Finally, play a guessing game to help her learn the job of each body part. Give each other clues, such as: "I'm for smelling. What am I?" (nose), or "I touch things. What am I?" (hand).

Dinosaur fun



Your youngster probably enjoys playing with toy dinosaurs and learning about these fascinating creatures. Turn your dinosaur lover into a scientist! Here's how.

Go on a dig. Bury different-size dog biscuits in a sandbox or a large plastic tub filled with rice. Let your little *paleontologist* (a scientist who studies dinosaurs) use tools like a magnifying glass and a small shovel to dig through the sand or rice and "discover" the bones. When your child uncovers all of them, have her glue the "bones" into a dinosaur shape onto a large piece of cardboard. Suggest that she name her dinosaur (perhaps after herself, "Tiffanyasaurus") and tell you all about it.

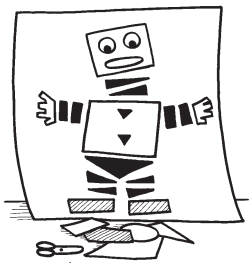
Make a fossil. Have your youngster choose a natural object (seashell, clean bone) and coat it with petroleum jelly. Help her make plaster by mixing together 2–3 cups flour and 1–2 cups water until smooth. She should press her object into the mixture and let it sit at least a day. When the plaster is dry, she can remove the item. The print left behind will look like a fossil! Explain that fossils help scientists learn what dinosaurs looked like.

MATH CORNER Shape up!

Hands-on play will help your youngster learn more about shapes. Try these three activities:

1. Cover a plate with a layer of cornmeal or sugar. Have your child use his finger to draw a triangle. He can smooth out the cornmeal or sugar and then draw a circle. How many shapes can he make?

2. Use shapes to make a picture. Together, cut out triangles, squares, circles, and rectangles from construction paper. Your youngster can move them around to create a boat, house, or robot. Ask him questions, such as "How is a square different from a rectangle?" and "How is a triangle different from a circle?"



3. Help your child cut out a square from paper and then cut it into two equal-sized triangles. What shapes can he make using both triangles? *Examples:* a parallelogram, a larger triangle.

SCIENCE LAB Amazing air

What takes up space all around us, but can't be seen, heard, or felt? With this experiment, your child will discover the answer—air!

You'll need: deep bowl filled with water; paper towels; 2 small paper cups (one with a hole in the bottom)

Here's how: Let your youngster crumple a paper towel into one cup. Have her turn the cup over, push it straight down into the water until it touches the bottom, lift it out, and remove the paper towel to see if it's wet or dry. She should repeat the experiment with the other cup.

What happens? When there's no hole in the cup, the paper towel stays dry. When there's a hole, the paper towel gets wet.

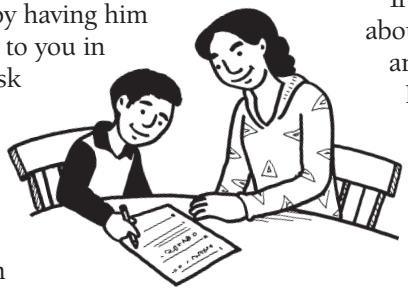
Why? In the cup without a hole, air fills the spaces around the paper towel and keeps it dry. In the other cup, air escapes through the hole, and water fills the space the air had occupied.

Q&A Help with homework?

Q: *Sometimes my child has trouble with his math homework. Should I help him?*

A: There are several ways you can support your youngster if he struggles with homework. First, make sure he understands the assignment by having him explain the instructions to you in his own words. Then, ask him to do a problem out loud—talking out the steps in front of you as he writes them down. If you notice an error, ask him to explain his steps again, and hopefully he'll find the mistake.

Another idea is to give him items he can use to "act out" his math problems. For example, he might count beads or stickers to help with addition problems.



Try to be enthusiastic about what he's learning, and praise his effort. Encourage him to try each problem he's assigned, but suggest that he ask the teacher for help the next day if he's frustrated.

OUR PURPOSE

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

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