

Math+Science Connection

Beginning Edition

Building excitement and success for young children

December 2008

Dekalb County School District

TOOLS & TIDBITS

All in the family

Does your child realize numbers can be added in any order? *Example:* $6 + 3 = 9$, $3 + 6 = 9$. Have her lay out 6 marbles, then 3 marbles, and count them. Next, have her put down 3 marbles, then 6, and count them again. She'll see that the answer is the same either way!



Learn with magazines

Magazines are a great way to introduce your youngster to science topics. Make a monthly trip to the library to read magazines such as *Know*, *Your Big Backyard*, *Click*, or *Chickadee*. If possible, let him pick a favorite one and subscribe.

Web picks

Play math games in English or Spanish at <http://math.rice.edu/~lanius/counting/index2.html>. There are stars and robots to count, patterns to form, and "machines" for counting by 2s, 3s, 5s, and 10s.

Identify whales by the sounds they make, have a race in space, put together a skeleton, and find many more exciting science activities at <http://lhs.berkeley.edu/kids>.



Worth quoting

"Discovery consists of looking at the same thing as everyone else does and thinking something different."
Albert Szent-Gyorgyi

Just for fun

Q: What kind of rocks are at the bottom of the Colorado River?



A: Wet rocks.

Graph that!

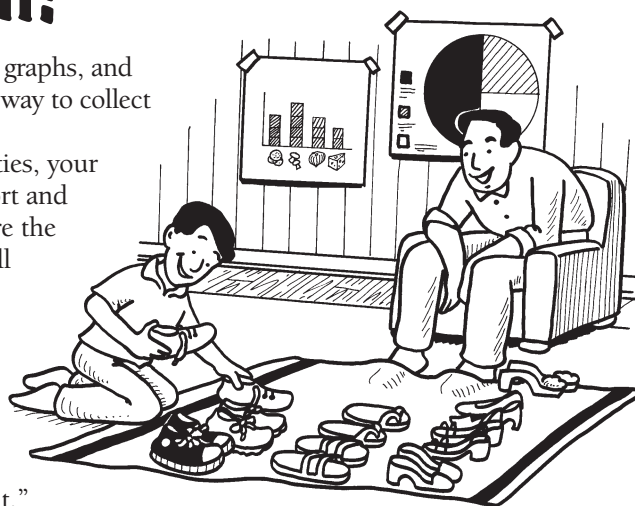
Introduce your child to graphs, and he'll see that they're a fun way to collect and organize information!

With these three activities, your child can use graphs to sort and count objects and compare the results. Practicing now will help him get ready for a lifetime of using graphs, from math assignments in school to weather charts in newspapers.

Life-size. Spread out a blanket as a "graphing mat," and help your child choose something to graph (shoes, toy cars). He might line up shoes by type (sneakers, sandals, dressy) and then count the number in each row. Are there more sneakers or sandals? How many dressy shoes are there? Ask him to think of other ways to graph the shoes (by color; by whether they tie, slip on, or Velcro).

Bar graph. Let your youngster survey family members about their favorite pizza toppings. He can draw pictures of the choices (pepperoni, mushroom, onion) across the bottom of a poster board. Have him make lines for columns and rows, then color in a box for each vote. *Example:* If three people chose mushrooms, he would color in three boxes above the mushroom.

Pie chart. Help your child figure out how much of his day he spends in school (6 hours), out of school (6 hours), and sleeping



(12 hours). Then, help him draw a graph for his day. He can divide a circle into three parts: half for sleeping and the other half split evenly between school and no school. Suggest that he color each section and make a key (yellow = sleeping, blue = school, green = out of school).

Design a car

Can your youngster make a car out of household materials? As she designs and tests her vehicle, she'll get an early lesson in engineering.

Give her LifeSavers, plastic straws (nonbendable), paper, paper clips, safety scissors, and tape. Tell her she will power the car just by blowing on it! *Hint:* Have her picture a sailboat.

To get started, ask her which pieces look like wheels (LifeSavers), what she could use for a sail (paper), or what might hold the wheels together (straws). Encourage her to experiment.

With each new design, she can blow on her car and see how far it goes. Which one works best?

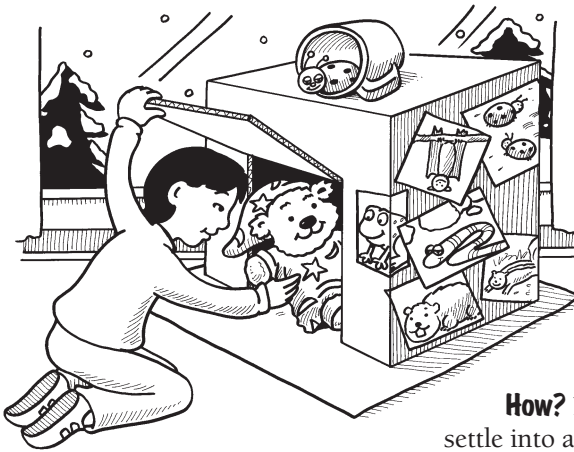


Time to hibernate

While your youngster is getting ready for sledding and snow days, some animals are getting ready for a long winter sleep. Help her learn about animals that *hibernate* with these suggestions.

Who? Your child probably knows that bears sleep through the winter. But does she know that ladybugs, bats, snakes, groundhogs, chipmunks, and some frogs also hibernate? Read aloud *Time to Sleep* (Denise Fleming) for a peek at these animals as they get ready for winter.

Why? One reason animals hibernate is that they can't find food in the winter. Show your youngster why: Together, drop



pineapple chunks in an ice cube tray, fill with water, and freeze. Later, give her a few cubes. Can she smell the pineapples or get them out? Explain that when the ground is frozen, animals can't get to their food either.

How? Before winter starts, animals settle into a warm, safe place such as a cave, burrow, or nest. Have your child create a spot to hibernate. She might turn over a large cardboard box, decorate it with pictures of animals that hibernate, and carefully cut a flap for a door. Then, she can put her stuffed animals to sleep inside.

MATH CORNER

Maybe... probably?

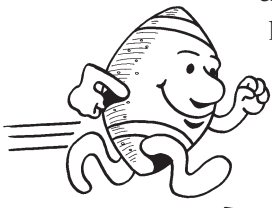
Probability is a big word for a little child. But it's a math concept that your youngster can start learning now.

Probability means how likely it is that something will happen. Play with probability at home, and you'll help your child recognize patterns and make predictions.

Start by brainstorming events that could happen, and ask each other if

they're certain, likely, possible, unlikely, or impossible. *Examples:* Grandma will visit this weekend (likely). Our football team will win the game this evening (possible). Have your youngster check the predictions.

For more practice, he can flip a coin 10 times and record on a sheet of paper the number of heads and tails. Let him predict how many heads and tails will come up in the next 10 flips. Was he right?



Q & A

Word problems—no problem!

Q: My son can add and subtract, but he gets confused with word problems. How can I help?

A: Word problems can be fun! You can give your youngster the know-how and confidence to do these problems with two simple strategies.

First, have him act out the problem (*Mike has 7 shirts, and Ben has 4 shirts. How many more shirts does Mike have than Ben?*). Let your son put 7 shirts on one chair ("Mike") and 4 shirts on another ("Ben"). He can match the shirts up, 1 for 1, and count the number Mike has left (3).

Second, suggest that your son draw the problem. He can make two stick figures and label them "Mike" and "Ben." Under Mike's, he should draw 7 shirts, and under Ben's, 4. He can cross off one of Mike's shirts for each one Ben has. When Ben's shirts are all crossed off, he'll see that Mike still has 3 shirts ($7 - 4 = 3$).



SCIENCE LAB

Play detective

Show your child that science is used in all kinds of jobs—including being a police detective. With this activity, she will learn how fingerprints are used to solve crimes.

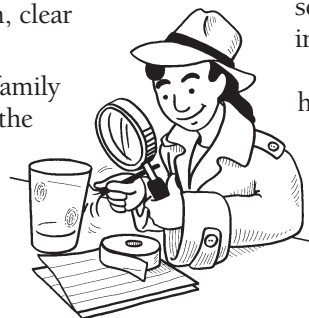
You'll need: 1 empty glass per person, cocoa powder, small brush, clear tape, white index cards

Here's how: Have each family member press a finger on the side of a glass. (*Tip:* Oily or sticky fingers make better prints.) Let your youngster sprinkle cocoa powder on the

fingerprint and gently dust the powder with the brush. Then, she can press tape onto the fingerprint, lift up the tape, and put it on an index card labeled with the person's name.

What happens? Your child will see a unique fingerprint on each index card.

Why? Every human being has a different fingerprint—no two people in the world have exactly the same one! That's why detectives lift fingerprints from crime scenes and use them to track down criminals.



OUR PURPOSE

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

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