

# Math+Science Connection

Beginning Edition

Building excitement and success for young children

May 2011

School District of Osceola County  
Title I Program

## TOOLS & TIDBITS

### Grow your name

Here's a project that will show your child how plants grow. Let her fill a shoebox with potting soil and trace the letters of her name in it with her finger. She can sprinkle grass seed into the letters, cover with more soil, and set the box in a sunny spot. Have her water it gently each day—soon she'll see her name growing!

### What's my number?

Use a guessing-game format to encourage your youngster to use logical reasoning. Tell him you're thinking of a number between 1 and 20. He needs to ask yes-no questions to narrow down the choices. ("Is it an even number?" "Is it more than 6?") When he figures out your number, he gives you one to guess.

### Book picks

Invite your child to do math along with the guests of the Strawberry Inn. Dayle Ann Dodds's *Full House: An Invitation to Fractions* shows how the visitors divide a dessert equally.

*Diary of a Worm* (Doreen Cronin) is a cute story told from a worm's point of view. Diary entries are sprinkled with facts so your child can learn all about worms.

### Worth quoting

"Sometimes questions are more important than answers." Nancy Willard

## Just for fun

**Q:** Which clown wears the biggest shoes?

**A:** The one with the biggest feet.



## Math in nature

This summer, help your child step outside into a world of math. She'll enjoy nature—and her math skills will stay sharp for when she heads back to school in the fall. Try these ideas.


**Match numbers.** Write the numbers 1–10 on the outside of a paper bag. Take a walk, and have your youngster look for small objects to match each number (1 feather, 2 acorns, 3 pebbles). She can drop the objects in her bag and use a marker to check off the number.

**Count the legs.** Let her take a magnifying glass outside and look closely at different types of bugs to count how many legs they have. In a small notebook, have her draw a picture of each bug and record its number of legs (0, 4, 6, 8). Ask her why she thinks the number is always even (because legs are in pairs).



**Compare lengths.** Help your child gather sticks in the woods. Then, ask her to line them up from shortest to longest.

*Tip:* Make sure she lines up the bottom ends evenly. Encourage her to use math vocabulary to describe the order. ("That is the *longest* stick." "This stick is *shorter* than the next one.")

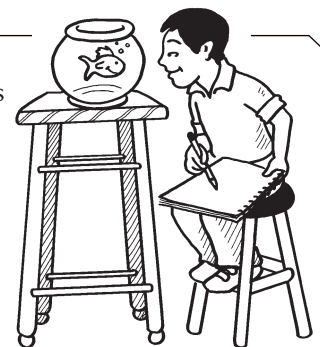
**Find the flower.** Have her practice *ordinal numbers* (first, second, third) with a row of flowers. Looking from left to right (the way she reads), ask her to find the fourth flower in the row or the seventh flower. 

## My pet

Encourage your youngster to study a favorite pet. With these suggestions, he'll learn more about animals and practice making observations:

- Ask him to draw the animal, and help him label its body parts (nose, mouth, tail). Together, compare them to his own. For instance, he and his fish both have two eyes. But the fish has fins, and he doesn't.
- Suggest that your child observe the pet's habits. He can draw a cat cleaning its fur or a hamster using an exercise wheel. Encourage more comparisons by asking what he does to stay clean (takes a bath) or keep fit (rides his bike).

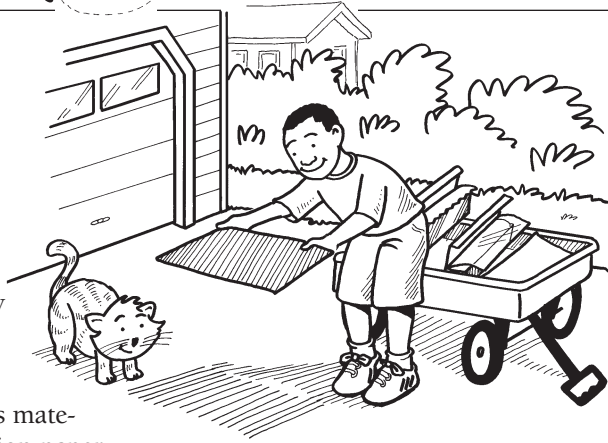
*Note:* If you don't have a pet, your youngster can study a friend's or relative's. 



# What lets light through?

Open the blinds on a sunny morning, and the house fills with light. That's because blinds are *opaque* (they block light) while windows are *transparent* (they let light pass through). Use these steps to let your youngster experiment with light:

1. Go outside on a bright day with various materials like notebook paper, black construction paper, plastic wrap, wax paper, and aluminum foil. Have your child hold each material over the sidewalk to see if it casts a shadow.



2. He'll see that the opaque materials (foil, black paper) make dark, solid shadows—no light gets through. And the transparent plastic wrap casts no shadow—all the light gets through. But what about the wax paper and the notebook paper? Explain that they're *translucent*—they block some light and let some pass, so their shadows aren't as dark as those from the opaque items.

3. Finally, talk about how different materials are useful. For example, tinted (translucent) car windows let your youngster see out but keep the sun from bothering his eyes. And an opaque baseball hat blocks all light so his forehead doesn't get sunburned. Can he think of other real-life examples?

## SCIENCE LAB

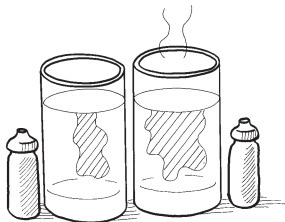
### Moving molecules

Your little scientist can learn about *molecules* and *diffusion* with this eye-catching experiment.

*You'll need:* 2 glasses, water, 2 vials of food coloring, timer

*Here's how:* Let your youngster fill one glass with cold water and the other glass with hot water. Ask her to predict what will happen if food coloring is added to the glasses at the exact same time. Then, on "go," each of you squeeze a drop of food coloring into a different glass. Time how long it takes for the water to turn color.

*What happens?* The hot water will turn color sooner than the cold water.



*Why?* You can explain that everything in the world, including water and food coloring, is made up of tiny bits called molecules. Molecules move around faster in hot liquid than in cold liquid, so the food coloring *diffuses*—or spreads out—more quickly in the hot water.



## MATH CORNER

### It all adds up

Does your child know he can add numbers in any order and get the same answer? Here's a game that will demonstrate this important math concept, called the *commutative property*.

First, have him paint one side of 10 beans or other small, flat objects (checkers, buttons). When they're dry, he can place 3 beans in a paper cup, shake, and spill them onto a table. Let him draw what he sees. For example, if 2 beans land paint side up, he would draw 3 circles and color in 2 of them.

Ask your youngster to add the beans together and write the number sentence ( $2 + 1 = 3$ ). Then, have him put all 3 beans back into the cup and repeat. He can keep doing this until he's found all the ways to make 3 ( $2 + 1$ ,  $1 + 2$ ,  $3 + 0$ ,  $0 + 3$ ). He'll see that whether he adds  $2 + 1$  or  $1 + 2$ , he'll get the same answer!

*Idea:* Play again with different numbers of beans.

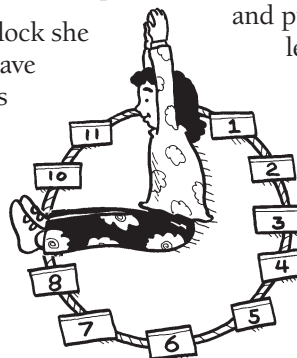


## Q & A

### Learning to tell time

**Q:** My child is having trouble reading the time on a clock with hands. Is there a fun way I can help her?

**A:** Let her make a big clock she can move around in! Have her number index cards 1–12, one number per card. Then, lay down a hula hoop. Show her a real clock, and have her tape the numbers around the hula hoop like a clock face.



Call out times, and let her use her body to show them. For example, for 9:00, she would lie down in the center and put her arms over the 12 and her legs over the 9. Explain that with her arms stretched up, the top of her body will be like the longer *minute hand* on a clock, and her legs will be like the shorter *hour hand* on a clock. Then, let her give times for you to form with your body so she can see what the "clock" looks like.

## OUR PURPOSE

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

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