

Math+Science Connection

Intermediate Edition

Building Understanding and Excitement for Children

October 2013

Title I / Learning Assistance Programs
Stanwood-Camano School District



INFO BITS

Count by 7s

Challenge your youngster to count by different numbers (4s, 7s, 9s). You could ask her to start at 3 and count by 7s, for example. Or have her begin at 92 and count backward by 4s. Another idea is to take turns. To count by 6s, you might say 8, she says 14, you say 20, and so on.

Bird calls

Whether you live in the city, country, or suburbs, your child can listen for



birds. Go outside together early in the morning, close your eyes, and listen. Ask him

to repeat the bird calls he hears. Does he hear the same ones each morning? What about at different times of the day—or different times of the year?

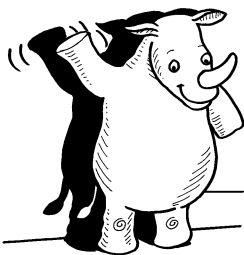
Web picks

At eia.gov/kids, your youngster could explore the world of energy with puzzles, experiments, and virtual field trips.

Learning math terms has never been so much fun! Dozens of terms, each of which can be activated with the click of a mouse, are at amathsdictionaryforkids.com.

Just for fun

Q: What can be the same size and shape as a rhinoceros but not weigh anything?



A: A rhinoceros's shadow.

Solving word problems

Doing word problems gives your child a chance to see math in action! Instead of working only with numbers, he's solving problems that could crop up in daily life. Here's a step-by-step strategy that will help.

1. What's the question?

Your youngster can start by retelling the story problem in his own words. That will help him figure out what the problem is asking him to do. Then, he could underline or write down that question. *Tip:* Encourage him to note the units he is solving for (books, minutes).

2. What should I do?

Recommend that he highlight main facts and circle key numbers. Just as important—he should cross out irrelevant information so it doesn't get in the way. Next, he can decide whether he needs to add, subtract, multiply, or divide (or do a combination of those operations). *Idea:* Suggest that he plug in smaller or easier numbers and solve the problem.

3. What's my best guess?

Predicting the answer will help your child see if his solution is reasonable. He



could make an educated guess or round the numbers and do a quick calculation.

4. Now for the math...

Encourage him to sketch out the problem, use toys to act it out, or role-play it with you. He can use what he learns to solve the problem on paper. *Note:* Be sure he shows all his work. He'll be less likely to make errors—and if he does, they'll be easier to find.

5. Was I right?

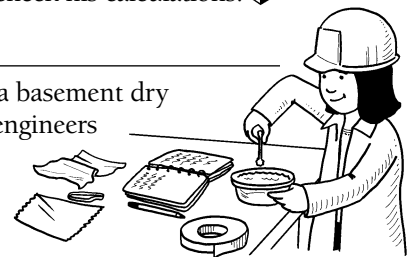
Have your youngster consider whether his answer makes sense. He could check it against his prediction and also double-check his calculations. ▣

Staying dry

What are the best materials for keeping a basement dry when it rains? That's the kind of question engineers wrestle with. Get your youngster thinking about solutions with this activity.

Let her gather household materials that might keep a cotton swab dry when dipped in water. For instance, she could wrap the tip in aluminum foil, plastic wrap, masking tape, or fabric (secured with a rubber band).

Then, she can fill a container with water and test each material. After each try, she should unwrap the swab and touch it to see if it is wet. Have her keep a record of the results and tell you her findings. What is similar about the materials that worked or those that didn't work? ▣



Recipe math

Your kitchen is so much more than a place to prepare and eat food. It's also a spot for your youngster to work on measurement skills. Try these suggestions.


Change quantities. Let her pick out a recipe to make. Then, ask for a different number of servings. For instance, you may want to feed 8 people rather than 4. Her job is to figure out the new amounts for each ingredient.



(Example: $1\frac{1}{2}$ cups chicken broth $\times 2 = 3$ cups chicken broth.)

Use different measures.

Have your child do the measuring when you cook and bake. If you need $\frac{3}{4}$ cup flour, encourage her to problem-solve by asking how many ways she could make that amount. She might use a $\frac{3}{4}$ cup measure, a $\frac{1}{4}$ cup measure 3 times ($\frac{1}{4} \times 3 = \frac{3}{4}$), or a $\frac{1}{2}$ cup measure plus a $\frac{1}{4}$ cup measure ($\frac{1}{2} + \frac{1}{4} = \frac{3}{4}$).

Idea: Recipes in America use measurements like teaspoons, cups, and ounces. But most countries use the metric system—and your youngster is learning that system in school, too. Suggest that she find an online converter and change a recipe into metric units (example: 1 cup butter = 226 grams butter). 

SCIENCE LAB Lift the bottle

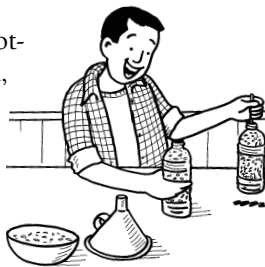
This may look like a magic trick, but it's really a way for your child to learn about density and friction.

You'll need:


- 2 empty water bottles (dry), funnel, uncooked rice, 2 pencils

Here's how:

Have your youngster use the funnel to fill each bottle with rice to about one inch from the top. Then, he should put more rice in one bottle by tapping it gently and adding rice until it is packed (but still an inch from the top). Now it's time for the "magic": let him push a pencil into each bottle and try to lift the bottle—using only the pencil.



What happens? He can lift the packed bottle, but not the other one.


Why? When the rice is densely packed, it has little room to move. So inserting the pencil makes the rice press against the sides. The resulting friction allows the pencil to lift the bottle. 

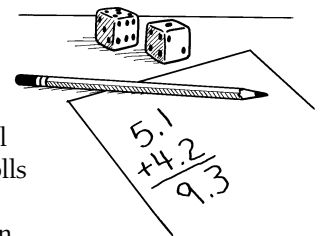


MATH CORNER Decimal racers

Race to score 25 points in this dice game by adding and subtracting decimals.

Take turns rolling a pair of dice and making a decimal out of the numbers shown. For instance, if your child rolls a 1 and a 5, he could turn them into 1.5, 5.1, 0.15, or 0.51. Once a player chooses a decimal, he writes it down as his score.

On his next turn he rolls the dice, makes a decimal, and decides to either add it or subtract it from his score. *Example:* If he rolls a 4 and a 2, he might add 4.2 to his total of 5.1 for a new score of 9.3 ($5.1 + 4.2 = 9.3$). The first one to score exactly 25 wins. (*Note:* If a new score would take you over 25, it's the next player's turn.) 



PARENT TO PARENT Community service projects


Recently I told my sister I wanted our family to do community service projects. She thought that was a great idea—and as a middle school math teacher, she mentioned that some projects could give our daughter math practice, too.

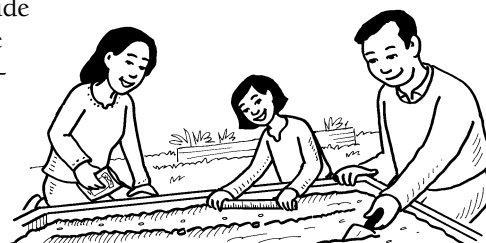
For instance, if we pack toiletry bags for troops stationed overseas, Emma can count and divide the items. Or if we work on a community garden, she could help with the garden layout—figuring out how

much area is needed for the tomato plants, for example, or how to space the seeds evenly.

Once I started looking around, I found even more ideas. I could teach my daughter to knit—there's a lot of math in following patterns—and we could make hats for premature babies.

I'm glad that Emma will be learning about helping others.

But it's also nice that she'll be working on her math skills—and seeing how math is used in the real world. 



OUR PURPOSE

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

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