

# Math + Science Connection

Intermediate Edition

Building Understanding and Excitement for Children

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Oakridge Public Schools  
Pollie Gilchrist, Director of Academic Programs



## INFO BITS

### License plate

Your child can practice comparing numbers in the car with this idea. Have him write the numbers from your license plate in the center of a sheet of paper. He should write “Less than” on the left side and “More than” on the right. As you drive, he’ll decide where to write license plate numbers he sees.



### You’ve got my eyes!

Does your youngster know that features like blue eyes, brown hair, and dimples are *inherited*, or passed down through generations? Suggest that she list her features, underline those she shares with Dad, and circle ones that are like Mom’s. Encourage her to do the same for siblings or grandparents to see what traits run in your family.

### Book picks

▣ *What Is My Number? A Game of Number Clues for 3rd and 4th Graders* (C. Mahoney) invites your child to answer fun math riddles.

▣ *Poop Detectives: Working Dogs in the Field* (Ginger Wadsworth) will captivate your animal lover with tales of how super sniffer dogs help find and save endangered animals.

### Just for fun



**Julie:** Hey, Jack, how did you find the weather at summer camp?

**Jack:** I went outside, and there it was!

## My strategy toolbox

What’s in your youngster’s math “toolbox”? Suggest that she write problem-solving strategies on separate index cards and keep them in a shoebox for easy reference when she does homework. Here are a few strategies to get her started.

### “Find helpful neighbors”

Would your child rather add  $59 + 42$  or  $60 + 41$ ? It’s often easier to work with numbers that end in 0, so with this strategy, she would round one or more numbers to the nearest 10.

*Example:* For  $59 + 42$ , turn 59 into 60 by adding 1. Subtract 1 from 42 (to make up for the 1 added to 60). Add  $60 + 41 = 101$ .

### “Use familiar facts”

Your youngster probably memorized some facts more quickly than others. She can rely on these familiar facts to figure out tougher ones. For instance, if she’s struggling with  $7 \times 6$ , she could think:



“I remember  $6 \times 6 = 36$ . I can add 1 more group of 6 to get 7 groups of 6. Since  $36 + 6 = 42$ , then  $7 \times 6 = 42$ .”

### “Draw a number line”

A number line helps your child “see” the math. For  $35 + 12 - 8$ , she could draw a line with the numbers 30–50 evenly spaced. Starting at 35, she would draw 12 “hops” (curved lines from one number to the next) up the line (to 47) and 8 hops back down the line (to 39).

*Answer:*  $35 + 12 - 8 = 39$ .

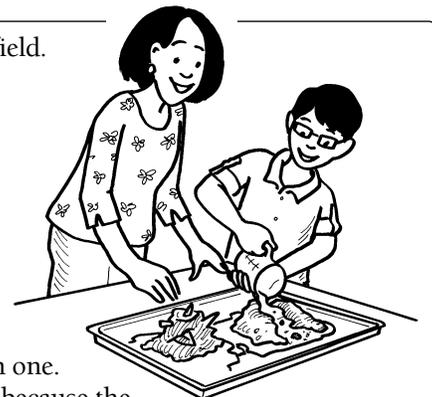
## How to prevent erosion

Rain can wash away a hillside or flood a field. Let your child experiment with *erosion*, and he’ll learn about an important job of plants.

First, have him fill one cup with damp soil and another cup with damp soil that he mixes with pieces of grass and leaves. Then, he can turn both cups over into a pan to create hills.

Which hill would erode—be washed away—faster by rain? He can test his prediction by pouring  $\frac{1}{4}$  cup water onto each one.

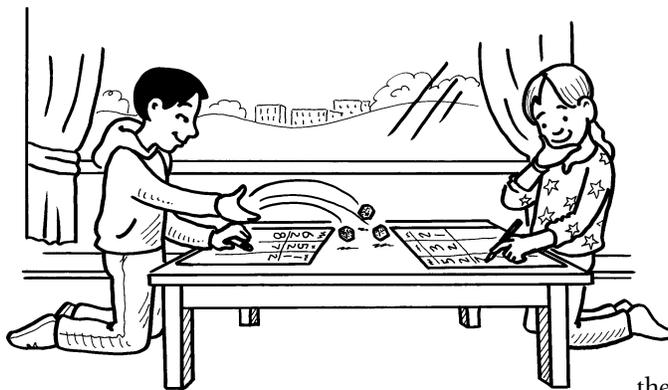
The hill with grass and leaves erodes less because the plants absorb water and help control its flow. This is one reason communities and farmers plant grass, bushes, and trees—they protect soil from heavy rain.



# Don't go over 999!

Your child can explore place value and use logical thinking with this game. The object is to score closest to 999—without going over.

**1.** Each player makes a score sheet with three columns, labeled “Hundreds,” “Tens,” and “Ones.” The labels tell the value of each number he'll write underneath (example: a 6 in the hundreds column equals 600).



**2.** On each turn, roll 1, 2, or 3 dice. At first, players will want to roll all 3 dice. But as they get closer to 999, they'll discover that they need to roll 2 and eventually 1— or risk going over.

**3.** Write each number rolled in one of the columns. Think about the best spot for each. For instance, roll 6, 5, and 1, and you might fill in 651, 561, or 156.

**4.** Keep a running total of your score, adding each new number that you form.

**5.** Each player decides when he has taken his last turn. For example, if his total is 996, rolling even 1 die could be risky, since he would need a 3 or lower! The player who gets closest to 999 is the winner. 🎲

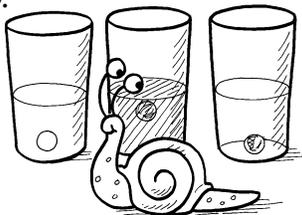
## SCIENCE LAB Marble race

If your youngster wonders why it takes a long time to pour honey from a container but milk comes rushing out, this experiment is for her!

**You'll need:** milk, cooking oil, honey, 3 tall clear glasses, 3 marbles

### Here's how:

Have your child put an equal amount of each liquid into separate glasses. As she pours, encourage her to notice how fast or slowly each liquid moves. Which one does she think a marble will fall through the fastest? Now have one person per glass drop a marble from the same height at the same time.



**What happens?** The marble in the milk will “win” the race.

**Why?** Liquids with higher viscosity—or thickness—are more resistant to flow. So the less viscous the liquid, the faster the marble will drop.

**Idea:** Let her repeat the experiment with other liquids. She can use her results to rate the viscosity of all the liquids. 📦

### OUR PURPOSE

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

Resources for Educators,  
a division of CCH Incorporated  
128 N. Royal Avenue • Front Royal, VA 22630  
800-394-5052 • rfeustomer@wolterskluwer.com  
www.rfeonline.com

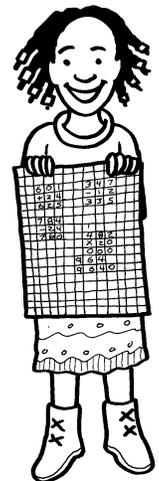
## Q & A Precisely right

**Q:** My daughter often makes careless errors in math problems. How can I help her work on this?

**A:** Get your child in the habit of being precise when she solves problems. For example, to practice lining up numbers correctly, she could use graph paper, writing one number or decimal point per box. Once she's used to working that way, it will be easy for her to transfer the skill to regular notebook paper and her everyday work.

Another idea is for her to use addition to check subtraction and use multiplication to check division (and vice versa). For instance, she can multiply  $48 \times 9 = 432$  to confirm that  $432 \div 9 = 48$ .

Finally, there's no substitute for proofreading—remind her to carefully look over her work before turning it in. 📦



## MATH CORNER How many sticky notes?

What's the area of your coffee table—in sticky notes? Your youngster can try this “sticky” measurement activity to find out.

Take turns picking a surface to measure, perhaps a tabletop or the front cover of a book. Let your child cover the surface with sticky notes, making the largest array (arrangement of even rows and

columns) possible. Then, have him multiply the number of rows by the number of columns to calculate the area.

He might say, “This table has an area of about 200 sticky notes, because there are 20 rows and 10 columns, and  $20 \times 10 = 200$ .” Or he could say, “The area of my science book is about 6 sticky notes. I made 3 rows and 2 columns, and  $3 \times 2 = 6$ .” 📦

