

# Math+Science Connection

Intermediate Edition

Building Understanding and Excitement for Children

November 2012

Sweetbriar Elementary School



## INFO BITS

### What's the score?

Watching football? Let your child practice math at the same time. When scores flash on the screen, ask how many ways a team could have gotten the points. *Example:* For 14, a team might have 2 touchdowns with extra points ( $7 + 7$ ) or 4 field goals and 1 safety ( $3 + 3 + 3 + 3 + 2$ ). Take turns naming possibilities for each score.

### Engineering careers

It's not too early to introduce your youngster to exciting options for engineering careers. You can explain that engineers are problem solvers and creative thinkers: they work on everything from building stronger bridges to designing medical devices and testing spacecraft. Ask her to draw a picture of engineers at work—and to discuss where she might fit into that picture.

### Book picks

▣ In *Math Potatoes* (Greg Tang), a book of illustrated math poems, rhyming clues will help your child solve equations.

▣ Let your youngster discover fun experiments in *The Everything Kids' Science Experiments Book* (Tom Robinson). A good resource for science fair projects, too.

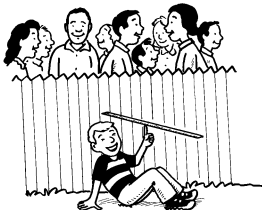
### Worth quoting

"The creation of a thousand forests is in one acorn." *Ralph Waldo Emerson*

## Just for fun

**Q:** How many feet are in a yard?

**A:** It depends on how many people are standing in it.



## As time goes by

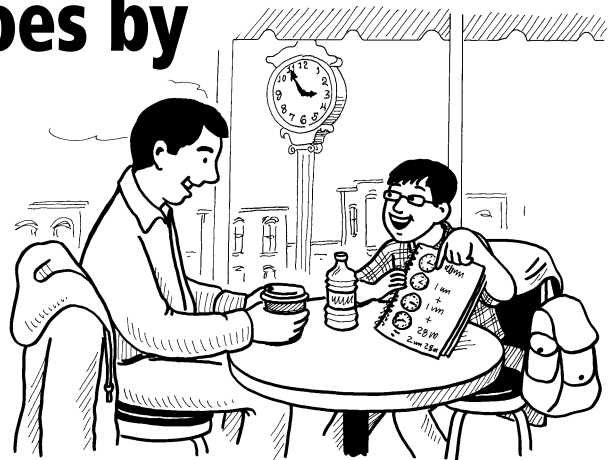
Figuring out *elapsed time*—or how long something takes—can be tricky. Yet it comes up regularly in everyday life and also shows up on standardized tests. Here are ways to help your youngster master this way of measuring time.

### Estimate time

Ask him to sit quietly and tell you when 10 seconds have passed. Time him to see how close he comes, and let him try again. Then, do the same thing for 30 seconds or 1 minute. Or pose questions like, "It's 1:10, and we're going to the store at 5. About how long will that be?" (He could estimate it's about 4 hours.)

### Draw clocks

Understanding elapsed time helps in figuring out travel time and in reading train, bus, or airline schedules. When you go somewhere, have your child note when you leave (1:15) and arrive (3:43). Then, he could draw a series of analog or digital clocks, the first showing 1:15, the next two advancing an hour each (2:15, 3:15), and the last one showing 3:43. To



get the total, he can add the time from clock to clock (1 hour + 1 hour + 28 minutes = 2 hours 28 minutes).

### Think it through

Your youngster might like to see how he spends his day. Have him list start and end times for each portion and determine the elapsed time. If his school day is 8:45 to 3:15, he might think, "8:45 to 9 is 15 minutes, 9 to 12 is 3 hours, 12 to 3 is 3 hours, and 3 to 3:15 is 15 minutes. So I'm in school 3 hours + 3 hours + 15 minutes + 15 minutes, or 6 hours 30 minutes." Have him add up the parts of his day to compare how much time he spends in school, eating meals, at activities, and sleeping. ▣

## Plant parts

What's in a salad? Leaves, roots, stems, seeds, flowers, and fruits! With this activity, your child can learn about the parts of plants she eats.

When you go grocery shopping, have her take along a notebook with a page labeled for each of those plant parts. Then, she could look closely at fruits and vegetables to decide which part they are and list them on the correct page. *Examples:* spinach (leaves), carrots (roots), asparagus (stems), peas (seeds), broccoli (flowers), and apples (fruit).

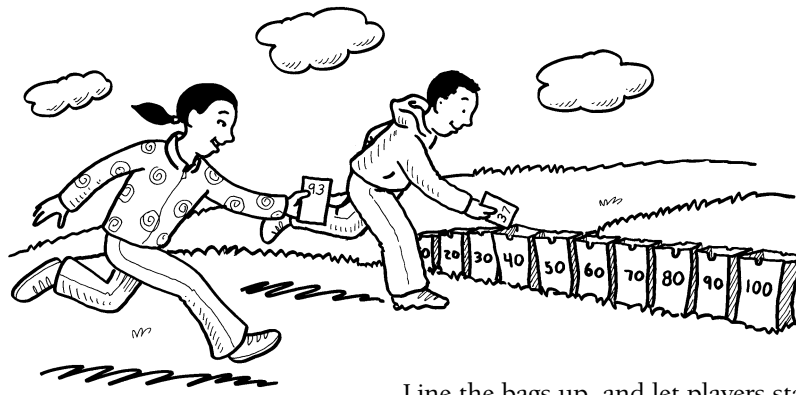
Finally, let her use the produce you take home to make her own healthy salad. ▣




# Rounding off

Whether rounding prices to figure out the cost of something or seeing rounded numbers in a headline, we use rounding all the time. Play this game to give your child practice.

*Note:* Share the rounding rule with your youngster. Round digits 1–4 down and digits 5–9 up. For example, 34 rounds to 30, and 36 rounds to 40.



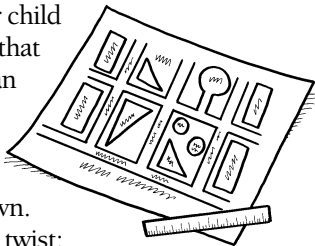
Label 10 paper bags 10 to 100 (counting by 10s). Give each player 10 index cards and a different color pen. Have players write random 2-digit numbers on each of their cards.

Line the bags up, and let players stand opposite them with their piles of cards by their feet. At “go,” each person should grab one of her cards, round the number, and run to put it in the right bag (93 goes in the “90” bag). Then, she can run back for the next card. The first player to finish wins—if all her cards are in the right bags! 

## MATH CORNER **Geometry city**

When your youngster was little, he probably liked to draw pictures of houses and buildings. Now that he’s older, encourage him to draw a whole city—and to work on his geometry skills in the process. Try these steps.


**1. Plan.** Your child can pretend that he is an urban planner and create a blueprint for a new town.



But there’s a twist: together, make a list of geometric elements to include. For instance, he might need to use 2 pairs of parallel lines, 3 sets of perpendicular lines, 4 rectangles, 3 triangles, and 2 circles.

**2. Design.** Have him draw his city on poster board. He should use a ruler or yardstick so he makes straight lines.

**3. Tour.** After he finishes, let him give you a tour. He could show you the geometric figures he used and point out right triangles or acute angles, for example.

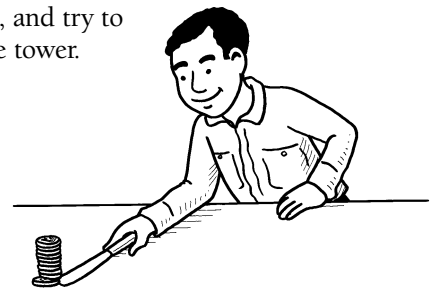
*Idea:* When you’re out and about, see what shapes, angles, and lines your youngster can find in his hometown. 

## SCIENCE LAB **Don’t topple the tower!**


Make a stack of pennies, and try to remove the bottom one—without toppling the tower.

*Materials:* pennies, a butter knife

*Here’s how:* Have your youngster stack 10 pennies on a table. Then, tell him to use the knife to scoot the bottom penny out, leaving the other ones standing. He should try doing this both slowly and quickly, restacking the pennies if they fall.



*What happens?* When he pushes the bottom penny out slowly, the pennies will fall over. If he pushes it out swiftly, the other pennies will remain stacked.

*Why?* Under Newton’s first law of motion, objects at rest stay at rest unless you push or pull them. In this case, pushing the bottom penny slowly gives it time to rub against the one above it. This *friction* pulls the top pennies along, causing them to topple. Pushing the bottom coin out quickly doesn’t allow time for friction to get going. 

## Q & A **Today’s math**


**Q:** *The math my child is doing isn’t anything like what I learned in school. What’s going on?*

**A:** Your parents probably said the same thing about the math you did when you were young! But it’s true—the way math is being taught *has* changed.

Today, kids are learning how to think through problems and how to use math in real-life situations. Your child still needs to know math facts, of course, but there is

more emphasis on understanding the concepts behind those facts.

Also, you might notice that she does more group work with classmates. That’s because schools are stressing collaboration and communication—skills that employers are looking for.

As your youngster works with others, she will benefit from hearing other approaches. She’ll also learn that there can be more than one answer to a problem and more than one way to find a solution. 



### OUR PURPOSE

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

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