

# Relishing Math at the Thanksgiving Feast

**T**welve-year-old Ziva Sholin looks at the cookbook, then at the cranberries on the counter, then at her mother. Mom isn't helping. Ziva doesn't know what to do about the cranberries. The relish recipe calls for two cups, but it's a recipe for eight, and 12 will be at the family's Thanksgiving gathering.

Last night, Ziva helped cook the sweet potatoes. It was a recipe for six, so doubling it made enough for 12. Simple! But what should she do now? How many cups of cranberries does she need?

"Suppose you had four people coming and the recipe was for eight," says her mother, Susan. "What would you do?"

"Invite more people!" answers Ziva brightly.

Susan laughs, but repeats the question seriously.

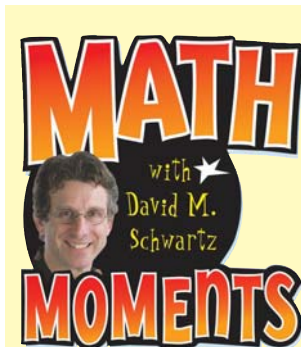


**Ziva Sholin, 12, contemplates how many cups of cranberries she'll need when the recipe serves eight, but her family will have 12 dinner guests.** PHOTO BY DAVID M. SCHWARTZ

"Make half the recipe," Ziva replies.

"OK, good. So, if you make half a recipe for four people, and a full recipe for eight, what would you do for 12?" Susan asks, miming with her hands the addition of a full quantity and a half quantity.

Slowly, Ziva's answer emerges: "One



We're delighted to introduce **Math Moments™**, a fun new element of our magazine. The column's creator, Oakland's David Schwartz, spends much of his time finding unusual, whimsical ways to make math and science come alive for kids and teachers, both through writing and through speaking at schools and conferences. He has written nearly 50 books for kids, including *How Much Is a Million?* and the "Look Once, Look Again" series.

Here, and in coming months, David will highlight the simple "math moments" families can discover and explore in everyday life.

recipe ... plus a half-recipe ... one and a half!"

"Right!" her mother exclaims. "So instead of two cups of cranberries, how many ..."

"Three!" Ziva cuts her off triumphantly.

Like any large meal, Thanksgiving dinner can yield a rich harvest of Math Moments. Children can be involved in many preparations that involve math: measuring ingredients, timing the roast, portioning the food, etc.

For young children, counting out utensils and dishes to set the table is good practice and gives parents an opportunity to ask leading questions: "Everybody will get two plates, so how many plates do we need altogether?" or "Do you think this bowl will hold half the stuffing?"

Ziva's first Math Moment came when her mom brought home an 18-pound frozen turkey. Her neighbor Atticus, 10, was visiting with his mother. Since both planned to be at dinner on Thanksgiving,

Susan asked the children to help her figure out when to start defrosting the bird. The label said to allow 24 hours for every 5 pounds. "We want it out of the oven at 5 p.m. on Thursday," she added.

Atticus jumped right in: "First tell us how long it has to cook."

Looking at the chart printed on the

wrapper, Ziva found that an unstuffed bird weighing 10 to 18 pounds should cook for three to three-and-a-half hours. Everyone agreed on three-and-a-half hours. (Reading and interpreting charts is also a math skill.)

"It has to finish at 5 p.m.," Ziva said, thinking aloud, "so it should start at ... 1:30."

"OK, good, so when do we start defrosting it?" her mother asked.

The two children quickly concluded that they would need more than three days, but less than four. To find a more precise answer, several mathematical strategies were considered. Atticus' solution drew gasps of admiration.

"If it weighed 15 pounds, you'd have to defrost it for three days, but we have another 3 pounds." He paused to think. "Well, suppose there are 25 hours in a day. That's close to 24. Since every 5 pounds needs about 25 hours of defrosting, that's five hours per pound. Right?" Everyone is with him. "We have three more pounds, so that's 15 hours – three times five." No arguments here. "So, start defrosting three days and 15 hours before 1:30 on Thursday."

After a spirited discussion of exactly when that would be, it was decided to move the turkey from freezer to fridge on Monday at 10:30 p.m. Susan protested that she goes to sleep at 9:30, and everyone agreed an extra hour of defrosting wouldn't hurt.

On Thursday, more Math Moments arrive with the pumpkin pie. "How should  
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## Math Moments

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we cut it to get 12 equal slices?" asks Atticus' mom, Judith.

Ziva suggests dividing the pie in half, halving the two halves to make quarters, and dividing each quarter into three pieces for 12 altogether. Atticus finds pencil and paper to try out another approach. He draws thirds of a circle, divides each third in half and then halves each of those pieces – 12 in all. Both solutions work.

When three pie slices have been dished out, Judith pauses to consider the fraction. "What fraction is three pieces of the pie?" she asks.

"Three twelfths," replies her son.

"What else can we call it?"

Ziva and Atticus are equally quick: "One-fourth." (For children less experienced with fractions, the answer will stare



back at them from the void in the pie where three slices had been, a neatly cut quarter.)

There is much to be thankful for at Thanksgiving dinner – family, friends, food, health ... and perhaps the many Math Moments that can be dished out along with

the meal, just as tasty in their own way. At the end of Susan's dinner, the guests gush thankfulness over her homemade ginger ice cream, now being scooped onto everyone's 12th of a pie.

For more information about David's math and science adventures, check out his Web site, [www.david-schwartz.com](http://www.david-schwartz.com), or write to him at [mathmoments@davidswartz.com](mailto:mathmoments@davidswartz.com).

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