



Crafty Math

In his camouflage trousers and brown sweatshirt, Ty Evenich, 6, looks like he's getting ready for a hunting trip. Which, in a way, is what he's doing. He and his great-aunt Debbie are standing over a sewing table, pinning the hem of an apron. The last time Ty went hunting with his dad, he decided he wanted to help cook breakfast at the camp. But there was no apron even close to his size.

Aunt Debbie places a pattern, folded in half, atop the fabric. At first puzzled by its size and shape, Ty wonders aloud why it looks the way it does. Finally, his confusion turns to understanding.

"I get it. When you open it up ... it will be bigger," he says.

"How much bigger?" Debbie asks.

"Twice as big."

She tells him that they need a 1-inch hem, and folds some fabric to demonstrate. She sets her "hem gauge" (a 6-inch ruler with sliding pointer) to 1 inch and shows Ty how to use it.

"So how much smaller will the apron be after we sew this hem all the way around?" Debbie runs a finger 1 inch from the outside edge of the pattern.

Ty almost says "1 inch," but seems to know it isn't right. Then he realizes the finished apron will be 1 inch shorter on each side. "Two inches!"

"You got it!" Debbie says, tousling his hair. She loves to see children think through her queries.

Almost any home craft project – sewing, knitting, beading, macramé and myriad others – can also be math projects. If adults ask questions and point out math connections, they will provide valuable lessons in measuring, computation, estimation, geometry and other skills.

While Ty pins the hem, his sister Shelby, 8, works on a quilt square, part of

a 4-H project. Quilting can be a splendid introduction to geometry. The more complex the quilt pattern, the more sophisticated the math. Even children who don't get to work on actual quilts can read delightful picture books that tie quilting to math.

Shelby is holding up two fabric pieces that she is about to sew together.

"What shape are they?" Debbie asks.



"Rectangles," Shelby says with confidence.

"What shape will you have after you sew them together?"

This is harder. After a minute at the sewing machine, Shelby has the answer, fascinated to discover that two oblong rectangles can make a square. (An older child might be asked how to predict when two joined rectangles will make a square.)

Back at the sewing table, Ty has finished pinning the hem and, after folding the inner edge under, Aunt Debbie runs the apron through the machine.

The next step is planning the pocket. The pattern calls for one long pocket across the front, seamed down the middle.

"Where should we put the seam?" Aunt Debbie asks.

"In the middle," says Ty.

"But where is the middle?"

He thinks, but not for long: "I don't know."

Debbie won't take *that* answer: "Think harder, Ty!"

Shelby comes to the rescue. Without a moment's hesitation, she folds the fabric in half.

"Right there!" she pronounces with big-sister superiority, pointing to the folded edge.

Ty is still unsure. He looks to his great-aunt, who doesn't resolve the issue but instead takes a piece of chalk and marks the folded edge. She opens the pocket.

"Is the chalk down the middle?"

Revelation dawns across Ty's face: "Yessssss!"

In minutes, he is donning his new apron and savoring the thought of flipping flapjacks. But his great-aunt is just as happy to know she has facilitated many Math Moments that will serve Ty well long after he outgrows the custom-made apron.

Math Moments™ creator 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. For more information about David's math and science adventures, check out his Web site, www.davidschwartz.com.

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