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Tuesday » March 25 » 2008

Cracking into physics

Team of students from The Study are headed to Tel Aviv to compete in an international physics tournament after winning the first round of a challenge by outwitting the competition

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Winning isn't everything. But it sure feels good to be the champs.

That's the way five students from The Study see it, after their team won the Eastern Canadian semifinals of a prestigious physics tournament.

"It feels so good. It feels like everything's coming together so nicely," said 17-year-old Lara De Stefano, one of the victorious Grade 11 students who competed at the 2008 Shalheveth Freier Physics Tournament.

"We worked so hard and everyone's so happy now. It's just so amazing."

By building an ingenious safe that nobody could break into, the team from The Study beat out five other schools at the international competition. Next month, they will go to the finals and take on the world.

CREDIT: ALLEN MCINNIS, THE GAZETTE

The Study students Tiffany Madon (left to right), Amanda McCoubrey, teacher Kelly Miller, Julie D'Aoust and Lara De Stefano demonstrate the project they, along with a fifth teammate, Caroline Jo, will take to the 2008 Shalheveth Freier Physics Tournament in Tel Aviv.

The physics tournament, which was organized by the Canadian Society for the Weizmann Institute of Science, was designed to test the students' imagination, teamwork and originality, while teaching them about the principles of physics.

It took seven months of planning and execution to create their safes, but the rules of the competition were really quite simple.

"Each team was given three pieces of wood, one piece of Plexiglas and a lock," explained Susan Stern, executive director for Eastern Canada for the Weizmann Institute.

The challenge was to build a safe that other people cannot break into, using the principles of physics.

The Study's winning safe, which looked sort of like a breadbox full of pirate's booty, was based on the principles of thermodynamics and acoustical properties. They cannot divulge more than that because they will be taking their safe with them to compete at the international level in Israel next month.

It all happened so fast, says Tiffany Madon. She remembers the day she volunteered to help build The Study's safe.

"Our physics teacher came up to us in class at the beginning of the year and asked us: 'I just need five of you for the physics tournament. Who wants to do it?' " the 16-year-old recalled.

"We put our hands up, not knowing what we were getting into."

It turns out they were getting into a lot. The five advanced physics students devoted countless extra hours after school to their project. They missed numerous school activities to work on it. Their team travelled to Vermont twice in order to consult with physics experts. Yes, it was a sacrifice, but the girls enjoyed every minute of it.

"They had an amazing time building it," said Kelly Miller, their coach and physics teacher. "And they learned an incredible amount of physics. So it's been a great experience for all of them."

But what's the big deal about learning physics?

"It's the fundamental science," Miller said. "It's the science behind all the sciences."

And it's not only that. Getting a handle on science can mean opening doors to countless career opportunities that can be lucrative, meaningful and satisfying. That's one of the reasons Weizmann Canada, which is part of a renowned institute of research based in Israel, holds its annual physics competition.

"Weizmann believes in nurturing the minds of young people in science and math," said Stern, "so they get excited about it, so they don't fear it, and so they know that the world is open to them and there's math and science all around them."

Learning all the science was great, said team member Julie D'Aoust. But there was more to the experience than that.

"We bonded as a team over this," said the 16-year-old. "It wasn't only learning about the physics principles, although that certainly was something. But we separated the tasks by strength. Some people did one thing, and some did others. So it was really a team experience. That's was great."

By the time their safe was built, approved by tournament organizers and fully tested, team member Amanda McCoubrey knew The Study had a chance of winning. But it was their first time at the event, which featured teams that had competed in previous years.

"I was very impressed with the other safes," said the 17-year-old. "They were all complicated. But I thought we would be able to break into at least a few of them. We didn't solve any of them within the time limit. And that was very surprising - especially since we won."

But then again, nobody broke into their safe, either.

At the end of the competition, the principal of the host school offered his compliments to the winning team.

"It's just amazing for a first-year entry," said Jim Officer. "There's a whole process and a big learning project in this project and you just nailed it on your first year. It's just exceptional. Congratulations, girls!"

What Do You Think?